DOCUMENT RESUME

ED 225 902 SO 014 473

AUTHOR Levin, Henry M.
TITLE Workplace Democracy and Educational Planning.
INSTITUTION Center for Economic Studies, Stanford, Calif.; Stanford Univ., Calif.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE Jan 78
GRANT NE-G-00-3-0205
NOTE 140p.; Prepared for International Institute for Educational Planning, Paris; For related documents, see SO 014 468-472.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Capitalism; *Change Agents; Democracy; *Educational Change; Educational Planning; *Education Work Relationship; Elementary Secondary Education; Higher Education; *Industry; *Participative Decision Making; Productivity; *Social Change

ABSTRACT

The movement toward greater democracy and participative decision making in the workplace of advanced capitalist societies is analyzed in terms of accompanying educational reforms. Eight chapters examine dominant views of education and work, the consequences of overeducation in society, the movement toward workplace democracy, specific reforms, educational reforms, and consequences for educational planning. The focus is on the divergence between the dynamics of the workplace and that of the schools which will create a disintegration of the old relationships and a new synthesis between the two institutions. The workplace change toward group and individual decision making, minimal competencies for all, collegial training, and cooperative skills will thus lead to greater democracy in school organization; emphasis on group projects; greater integration by race, ability, and social class; team teaching; greater emphasis on problem solving; mastery learning; criterion-based tests; peer teaching; and cooperative problem solving. The educational planner will be a technician assisting the process and will attend to the details of implementation. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED225902

Revised Draft

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.
Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

WORKPLACE DEMOCRACY AND EDUCATIONAL PLANNING

by

Henry M. Levin

January 1978

Stanford University

and

Center for Economic Studies
457 Kingsley Avenue
Palo Alto, California 94301

Prepared for International Institute for Educational Planning, Paris. Much of this monograph is based on research carried out for the National Institute of Education under a grant to the Center for Economic Studies on "The Educational Implications of Industrial Democracy." The author wishes to thank his colleagues Martin Carnoy, Bill Behn, Joyce Crain, Kathy Wilcox, Mike Carter, Russ Rumberger, Bob Jackall, and Pia Moriarty for their intellectual support, and Claire Russell for assistance in the preparation of the manuscript. He also wishes to acknowledge the support of the Center for Advanced Studies in the Behavioral Sciences where he was a Fellow in 1976-77 and where much of the manuscript was prepared. The author is especially grateful to David Tyack for a critical reading and feedback.

Copyright: Henry M. Levin, 1978.

SO 014 473

WORKPLACE DEMOCRACY AND EDUCATIONAL PLANNING

Contents

I. INTRODUCTION 1

II. DOMINANT VIEWS OF EDUCATION AND WORK 3

Education and Social Growth 4

Education for Social Efficiency 5

Comparison of the Two Views 6

Insights and Dilemmas 10

III. A DIALECTICAL VIEW OF EDUCATION AND WORK 13

Historical Aspects of Capitalist Work 14

Historical Aspects of Schooling 21

The Dialectical Mechanism 30

Correspondence and Contradiction 31

IV. OVEREDUCATION AND ITS CONSEQUENCES 45

Divergence of Education and Jobs 46

Causes of Overeducation 49

Overeducation and Unfulfilled Expectations 52

Job Dissatisfaction and Implications for Production 56

Implications for Reform of Education and Work 59

V. THE MOVEMENT TOWARD WORKPLACE DEMOCRACY 61

Types of Workplace Reforms 61

WHICH REFORMS ARE MOST LIKELY? 70

Workers' Criteria 72

Management Criteria 74

Trade Union Criteria 76

State Criteria 78

STRATEGIES AND SPECIFIC REFORMS 80

Management-Initiated Reforms 81

Worker-Initiated Changes 87

A Note on the Role of the Trade Unions 90

Changes in Work in the Longer Run 91

VI. EDUCATIONAL REFORMS FOR WORKPLACE DEMOCRACY 92

Which Educational Reforms are Most Likely 92

Educational Reforms for the Present Education-Work Crisis 93

Career Education 94

Recurrent Education 97

Back-to-Basics 99

Conditions for Successful Educational Reforms 100

Specific Educational Reforms 103

Group Decision-making 106

Individual Decision-making 108

Minimal Competencies for All 108

Collegial Training 109

Cooperative Skills 110

Other Trends 110

SUMMARY 111

VII. CONSEQUENCES FOR EDUCATIONAL PLANNING 113

Educational Planning as Ideology 114

FOOTNOTES 121

BIBLIOGRAPHY 125

WORKPLACE DEMOCRACY AND EDUCATIONAL PLANNING [1]

I. INTRODUCTION

Virtually all of the advanced capitalist countries of the world are facing numerous pressures to alter the nature of work. While traditionally the owners of capital have had an almost unlimited prerogative in determining how to organize the production process and its utilization of labor in the creation of goods and services, that privilege is being challenged increasingly by individual workers, trade unions, and governments. Individual workers have manifested their resistance in incidents of sabotage, deterioration of quality control, absenteeism, employee turnover, "illegal" work stoppages, and other acts of defiance. Increasingly, some trade unions have sought to bargain directly over the conditions of work and to obtain legislation that would be favorable to an increase in the influence of workers on the governance of the workplace.

At the cutting edge, workers in Sweden have been given the right to participate in decisions on employment policies and practices of the firms in which they work as well as matters of the distribution of work, issues of safety in the workplace, and other aspects of the job environment. Company law in the Federal Republic of Germany requires a policy of co-determination (Mitbestimmung) in which one third to one half of the governing boards of firms must be composed of workers, and the Common Market countries as a group and Britain, separately, are discussing or developing similar legislation. In addition, both Western Europe and the United States are witnessing a variety of managerial attempts to alter the content and organization of work to reduce worker disruption and threats to productivity. A significant number of these attempts focus on increasing the participation of workers in decisions that affect the characteristics of the work situation itself. While the

majority of these changes are experimental in nature, such modifications are clearly on the increase.

Broadly speaking, all of these changes in both laws and in organization of work are addressed to increasing the participation of workers in determining those factors which affect the substance of their work activities, a movement towards greater workplace democracy. While the term industrial democracy is used more commonly to refer to such developments, the changes are not limited to industry. Rather they apply to other types of enterprises and government bureaucracies as well. If such alterations in traditional work relationships are adopted more widely as we will argue in this monograph, they will have stroug implications for the educational preparation of workers for new work roles. And given changes in educational requirements for the workforce, there are likely to be important planning consequences.

It is the purpose of this study to set out the nature of changes in the workplace that will be initiated by a movement towards greater democracy and worker participation in the work enterprise and to trace its implications for the educational system and for educational planning. In order to do this we will organize the presentation in the following manner. Since we are asserting that changes in the nature of work have important consequences for education, it is important to suggest the linkages between the two phenomena. Section II will discuss the two dominant views on the connections between education and work, and Section III will offer a third alternative which seems to have greater explanatory power. Section IV will present some of the problems that have arisen in the work relationship in advanced capitalist societies in recent years and their educational origins and implications. This will lead to the specification of the types of workplace reforms that are likely to be adopted for addressing these problems with specific

attention to increased worker participation and workplace democracy which will be discussed in Section V. Section VI will consider the educational reforms that are consistent with these changes in work, and the final section of this monograph will explore the role of educational planning in addressing these changes.

Before proceeding, it is important to stress that the following analysis will be developed only for the advanced capitalist societies of Western Europe, the United States, and Canada. To the degree that similar patterns are found in Japan and Australia, New Zealand and the developing capitalist societies of the third world, some of this analysis may be applicable in those countries as well. And surely there are at least some parallels in the dynamics reflected by the behavior of alienated workers in the advanced capitalist societies and those in the communist countries where the state and its bureaucratic managers serve a role similar to that of capitalists and their managers in dominating the organization of production and the labor process. But the central focus of this monograph will be restricted primarily to Western Europe and the industrial nations of North America, and there will be no claims of greater generality. However, the reader may find that portions of the presentation can be adapted to other settings as well.

II. DOMINANT VIEWS OF EDUCATION AND WORK

There exist two dominant views about the relationship between education and work, and each of these is embedded in a larger framework of assumptions about the role of schools in serving society. The first consists of a philosophic view that derives from the view that education represents a mechanism of social growth. The second represents a more instrumental view that education is a device for increasing social efficiency. Each framework has very

different implications for the connection between education and work. The two approaches will be discussed and compared.

Education and Social Growth

The role of education in creating social growth is a view that is closely associated with the philosopher John Dewey. Dewey saw in education the potential for transforming the young so as to create a more desirable society.

> In directing the activities of the young, society determines its own future in determining that of the young. Since the young at a given time will at some later date compose the society of that period, the latter's nature will largely turn upon the direction children's activities were given at an earlier period. This cumulative movement of action toward a later result is what is meant by growth (Dewey 1916:41).

To Dewey the process of education was a process of living rather than a preparation for future living. Accordingly, he wished to see created in the schools the elements of a good society that would become the basis for the organization and functioning of the larger society at some future time as educated children became adults.

Crucial to the Dewey vision was the emphasis away from education as an instrument for satisfying the existing social order. Dewey castigated many features of the industrial system of the early twentieth century, and he rejected the deliberate preparation of the young for existing work roles. To Dewey the existing system of work was one based upon the undesirable fact that work was performed:

> "...simply for the money reward that accrues. For such callings constantly provoke one to aversion, ill will, and a desire to slight and evade. Neither men's hearts nor their minds are in their work" (Dewey 1916:317).

To Dewey, the work system needed to be transformed to one in which work had intrinsic meaning, and he believed that this could be done only when the

young had experienced an education based upon activities and social interactions that were carried out for their intrinsic worth rather than for their commodity or external values.

In summary, Dewey saw the role of education as the provision of activities of an intrinsically-satisfying nature for all children. Children would be educated through experiences that would relate to the larger needs of mankind. Education was not to be justified by its external returns, but rather it was to be measured against the intrinsic value of the process itself in developing the talents of the young. Within this context the schools would provide an education with broad social meaning and with implications for transforming the present society and its organization of work to a more participative, interactive, democratic, and humanized experience. In this context, the preparation of the young for the existing workplace was denigrated in favor of preparing them to create a system of work in the future based upon the values that would arise from their education.

Education for Social Efficiency

The social efficiency view contrasts sharply with that of education for social growth. While the former approach would emphasize the intrinsic worth of educational activities, the latter would focus on the value of education in preparing the young for existing adult roles. In this framework the schools exist as part of a broad system of socialization that is designed to create adults who are competent in satisfying the demands that society places on its adult members.

> In general, the objective of socialization is to produce competent people, as competence is defined in any given society. It aims to develop a person who can take care of himself, support others, conceive and raise children, hunt boar or grow vegetables, vote, fill out an application form, drive an auto... (Inkeles 1966:265).

The educational consequences of the socialization for competence view are straightforward. The schools are viewed as an influence for molding youth to some set of external standards.[2] In this sense, education is viewed only as a means to an end rather than as a meaningful process in itself. The measure of success that is implied for the schools is not the degree to which they foster intrinsically meaningful activities, but the degree to which they satisfy competency-related outcomes. The emphasis is placed on the "output" of the school rather than the process, for the process is only important to the extent that it produces the desired end result, a view which conflicts directly with that of the social growth perspective.

It takes little imagination to denote the connection that is assumed between education and work within the framework of the education for social efficiency view. Competent workers must have specific skills, behaviors, values, and attitudes which are not likely to be provided by such other institutions of socialization as the family, church, and community. Therefore, the school must serve to provide these traits during the period of childhood and youth in order to create a properly socialized adult workforce. More specifically, the performance of the educational system with respect to work would be evaluated on how well students are being prepared for the requirements of the workplace.

Comparison of the Two Views

It is difficult to compare the two views directly, because they tend to address themselves to different questions. The social growth perspective represents a moral approach to the relationship between education and work. The specific requirements of the workplace are denigrated to the emphasis on constructing healthy and satisfying educational experiences which will nurture

all of the innate talent among the present youth in behalf of creating a democratic, social transformation of the future society. This view is one based upon the humanistic conception of mankind and its social perfectability. It is not an attempt to describe the existing functions of schools, nor does it focus on the influences that have shaped either the existing schools or the workplace. Rather, it is a vision of the "proper" role of education in creating and sustaining a different and better society than the present one.

If the social growth framework represents the blueprint of the moral or humanist imperative, the education for social efficiency view is one that is driven by a need to accommodate the preparation of youth to the demands of existing reality. This view has its intellectual roots in the functionalist approach of anthropology and sociology which attempts to organize cultural and social phenomena in order to ascertain how they are functional to a society (Malinowski 1945; Parsons 1964). On the basis of a functionalist analysis, the schools can be understood as a response to the need to prepare workers for the technological requirements and social organization of modern work enterprise.

For example, Dreeben (1968: 114-132) refers to five major characteristics of modern work that must be accommodated by the worker: (1) separation of the workplace from the household; (2) distinction between the worker as a person and the position he occupies; (3) widespread employment in large-scale organizations with both bureaucratic and professional forms of authority; (4) individual accountability for the performance of tasks judged according to standards of competence; and (5) the affiliation of individuals to organizations through ad hoc contractual agreements. "Qualifying people for work, however, involves much more than training competence in job-related skills; it involves as well the shaping of men's states of mind, and gaining their

willingness to accept standards of conduct related to holding a job as well as to master its component activities" (Dreeben 1968: 129-130). Virtually all of these qualities can be traced to parallel organizational arrangements and activities pursued by modern schools.

In fact, Gintis (1971) has suggested four types of personality characteristics that are required by the modern bureaucratic and hierarchically organized enterprises that characterize our society, and all four can be linked to the school agenda; (1) proper level of subordination, (2) discipline, (3) matter-of-factness in social relations, and (4) motivation according to external reward structures.

Subordination and proper orientation to authority along hierarchical lines are necessary in virtually all modern work enterprises. "As the worker relinquishes control over his activities on the job, so the student is first forced to accept and later comes personally to terms with his loss of autonomy and initiative to a teacher who acts as a superior authority, dispensing rewards and penalties" (Gintis 1971:274). The discipline of the bureaucratic work structure with its requirements of highly regularized and conforming behavior to time schedules and regulations is reflected in Silberman's description of the school environment: "How oppressive and petty are the rules by which they (the schools) are governed" (Silberman 1970: 11).

Further, as Weber has noted, bureaucracies function best when social relationships are characterized by "rational matter-of-factness" rather than emotion (Weber 1958). This also seems to strike a responsive chord in the schools where Dreeben asserts there is emphasis away from affect and toward "...matter-of-factness in the accomplishment of tasks that governs the relationship between teachers and pupils" (Dreeben 1968: 29-30).

Finally, since workers have little or no control over the product or nature of their work, it is necessary to motivate them through rewards that are external to the work itself, such as money and prestige. It is obvious that similar conditions exist in the school where the students have little control over their circumstances, and their activities are not determined primarily by their intrinsic interests and concerns. Rather, school tasks are imposed upon them by a highly planned and routinized organization that manipulates student activities and the conditions under which they are pursued, and in order to obtain student conformance and cooperation with this reality there is a heavy dependence on external rewards such as grades, class ranks, and diplomas (Dreeben 1968: 33-35).

The central role of the modern production enterprise and its technology is crucial to understanding the appeal of the perspective to persons whose experiences and consciousness have been heavily molded by modern bureaucratic universities, enterprises, and government agencies. To the person who believes that technology and its application in the workplace must be large-scale, hierarchical, and depersonalized because this is the path that has been followed historically throughout most of the industrial world, the inevitability of preparing people for such an eventuality seems self-evident, even if the human condition of work defined by such circumstances is less than appealing.

Certainly this is the view that has undergirded the role of the educational planner in his attempts to fulfill manpower requirements, project teacher needs, estimate costs and funding requirements, and specify the optimal number and locations of school plants. This type of planning activity presumes that the educational system will prepare the young for the inevitable realities of the workplace, no matter how satisfying or repugnant those adult

roles may be. In this context, educational planning and education itself are viewed primarily as exercises in social engineering in which it is only necessary to ascertain which competencies will be needed, and then the educator and educational planner will design the educational experience to achieve the end result.

Insights and Dilemmas

While both of these views yield interesting insights into the relation between education and work, they fail to address at least three important questions that we must understand if we are to trace the implications of workplace democracy for educational planners. (1) What process has determined and continues to determine the nature and organization of the workplace and its human requirements? (2) What are the forces and processes which have shaped and continue to shape the schools? And (3), what are the connections between changes in the workplace and the education of the young? Neither the social growth approach nor the education for social efficiency one addresses specifically these issues.

The social growth theory is essentially a normative description of a desirable world. In that world the formal education of the young would represent a dominant force for shaping future society in the way that we might envision it should be molded, and we, in turn, are obligated to formulate schooling experiences that will create that society. Such a view ignores the question of which forces have actually shaped the present school experience, the one that reformers wish to alter. Nor does it attempt to reveal how the characteristics of the workplace that Dewey found so repugnant have evolved. The social growth perspective is essentially a moral approach to ascertaining the content and proper role of schooling. It has future consequences, but no historical antecedents.

In contrast, the social efficiency view represents an attempt to provide a descriptive account of how the functions of the school are integrated into the total function of society, of which the workplace is a crucial element. While it is demonstrated that at any particular time there are many functions of the school that prepare persons for the requirements of the workplace, there is no analysis of the dynamics of the relationship. The mysterious nature of this association between the forces that create change and those that prepare mankind to adapt to those changes is never explicated.

The socialization for competence view represents a useful descriptive approach to establishing the fact that a connection exists between the institutions in which adults participate and the agencies responsible for preparing adults for such participation. But, without a specific theoretical framework for linking the two phenomena, the view has no predictive value. The concept does not assist us in knowing why society changes in the way that it does, nor does it delineate the mechanisms that alter the modes of socialization to maintain their functionality.

Further, the emphasis on the universal nature of the adult competencies that are required in a given society tends to obscure the differentiation of those traits along social class dimensions. The fact that social class differentiation in both adult competencies and in socialization are not addressed tends to obscure the functional nature of class-related differences in both the workplace and schools as well as among other institutions. The implicit assumption that lies beneath the social efficiency view is that an industrial society will require a hierarchy of technical skills, and that efficiency in production requires the development and identification of the talents of each individual for placement in that production hierarchy according to the merits of the individual.

Accordingly, it is presumed that only individual outcomes are important in fulfilling the hierarchical positions of the meritocracy and that social class origins and social class outcomes are an irrelevant way of thinking about the phenomenon. In fact, Daniel Bell (1973) has argued that the emerging post-industrial society will be based upon such a high degree of bureaucratic rationality that political and economic class distinctions will disappear altogether to be replaced by a technical, professional, and scientific elite. The latter will be selected on purely meritocratic grounds of individual knowledge for fulfilling the necessary technical roles. In such a society, the only factor that would stand in the way of upward social mobility would be the genetic limitations on the individual (Herrnstein 1973) where schooling would enable every individual to reach his full potential. Unfortunately, the origins of the existing and emerging technology and work organization are left unexplored as if they had developed either by divine means or by a representative political mechanism embracing all elements of society.

An alternative perspective, then, must represent a more complete framework for analyzing the relationship between education and work. First, it must be dynamic in reflecting the forces of change that dominate both the schools and the workplace. Second, it must enable us to explain a host of related phenomena such as the social class, oriented nature of schooling and its relation to the workplace, the failures of important educational reforms to change the educational experience, and the present over-production of "educated" persons relative to the number of jobs. Finally, it should have predictive value in enabling us to assess the implications of changes in the nature of work on the shape of the educational experience that will be provided by the schools.

III. A DIALECTICAL VIEW OF EDUCATION AND WORK[3]

In order to understand the relationship between education and work, it is not sufficient to examine the functional relationships between the two at a point in time, but it is necessary to ascertain historically how the two were intertwined. Accordingly, it is useful to provide a brief historical picture of the development of work under the capitalist mode of production and the simultaneous development of the system of mass education. While each country has witnessed a different history in terms of details, the advanced capitalist societies generally have shared certain similarities. For example, the origins of the industrial transformation preceded the rise of the educational system, in contrast with the less-developed societies where the educational system has generally emerged in anticipation of the industrial order.

The following historical presentation will apply particularly to the United States; however I think that it can be demonstrated that a detailed analysis for other advanced capitalist nations would uncover a similar pattern (although with differences in details). First, we will address the transformation of work under capitalism, and then we will focus on the establishment and evolution of the educational system over the same period. It will be suggested that the two histories share common elements and interactions that can only be understood within the context of a dialectical relationship that tended to unfold in the following manner.

The evolution of the educational system can best be understood in the context of the need for socialized workers for the work requirements of the emerging industrial capitalism in the nineteenth century and its later transformation to corporate and monopoly capitalism as well as the extension of the capitalist mode of production to the services and agriculture. For a considerable period of time the schools have corresponded closely in their functions

to the needs of capitalist enterprises, but in recent years the internal dynamics of the educational system have created a divergence from the requirements of the workplace. This deviation is characterized by an increasing difficulty in integrating young and overeducated persons into the workplace, with resulting conflict and challenge to the existing modes of capitalist production. It will be argued that these divergencies will be resolved only by a new synthesis created by reforms in both educational and work spheres that will establish a new functional correspondence between education and work.

Historical Aspects of Capitalist Work

While a history of work is a rather complicated undertaking that has been the subject of an extensive literature (e.g., Thompson 1964; Nelson 1975; Braverman 1974; Marglin 1974), this brief review will focus on two major trends that bear upon our thesis: first, the historical shift of the majority of workers from the self-employed category to employment as wage and salary workers for capitalist firms and government; and second, the development of large hierarchical and bureaucratic capitalist firms and government agencies based upon the simplification and routinization of jobs in order to increase productivity under a consolidated form of managerial control. Both of these interdependent developments had a profound effect on the nature of work by removing from the worker the ability to control the nature of his work activity and creating the modern syndrome of worker frustration and alienation.

At the time of the founding of the U.S. Republic, most work was performed in the fields, workshop, and small mercantile or commercial establishment. It has been estimated that some eighty percent of the non-slave workforce were individual proprietors, property owners, and professionals

(J. T. Main 1965: 271-272). While the work was arduous and the hours were long, each person had a rather large degree of control over the nature and content of work activity as well as the satisfactions of seeing the fruits of his labor culminate in a product or service. Much of the work took place at the level of the household or family rather than in establishments that were separate from the household. Other establishments were small, and workers generally participated in the production of the entire product rather than just a small portion of it.

But two centuries later a profound transformation of working life had occurred. The vast majority of workers had become wage and salary employees of business firms or the government in large bureaucratic organizations with an extensive hierarchy of positions. By 1976, less than nine percent of the labor force was self-employed, while over ninety percent were employed as wage and salary workers (U.S. Department of Labor 1974: 238). Of these, the vast majority were found in sub-managerial roles, with only about one in thirteen in 1969 reporting an occupation of manager or official (Reich 1972: 175). Not only had the incidence of being one's own boss declined extraordinarily over this period, but most workers found themselves in the midst of a large corporate bureaucracy. For example, a recent survey of some three and one-half million industrial units that employed 70 percent of the civilian labor force found that over half of these employees were working in only two percent of the firms, and more than one-quarter were employed in only one-third of one percent of the firms (U.S. Department of Health, Education, and Welfare 1973: 21).

Inside of these large enterprises the work became organized into an organizational pyramid with a large number of workers at the bottom working under close supervision and pervasive rules and regulations and only a few

managers at the top. In the intermediate levels are other groups of employees with increasing supervisory responsibilities among jobs at the top of the hierarchy. Jobs had also been transformed from ones requiring a relatively large number of skills and operations to ones characterized by a few repetitive tasks. That is, the production of goods and services was subdivided into a large number of simple operations, and the contribution of each employee was to specialize in a single task that would be repeated again and again over the working-day, work-week, and work-year.

This process of fragmentation of work became especially dominant beginning in the latter part of the nineteenth century with the application of "scientific management" or Taylorism, so-called after its principle architect, Frederick Taylor (Nelson 1975: Chap. 4), but its principles had been set out at least a century earlier in the Wealth of Nations by Adam Smith (1937). Smith emphasized the gains in productivity that could be made by transforming existing artisan and workshop production into a large number of separate tasks that would be allocated among workers, each repeating the same operations throughout the workday. More important, the production could also be centralized in one place under a single capitalist entrepreneur, in contrast with the relatively small and decentralized operation of the traditional workshop.

The stultifying effects of these changes on the worker were foreseen by Smith (1938):

> "In the process of the division of labor, the employment of the far greater part of those who have labor, that is of the greatest body of the people, come to be confined to a few very simple operations, frequently to one or two." As a result, the workman "...generally becomes as stupid and ignorant as it is possible for a human creature to become..." (734-35).

That is, the intrinsic characteristics of the work are neither satisfying nor fulfilling in terms of human growth. Each worker tends to repeat a meaningless task which he does only because he is paid for it and not because it fulfills a basic intrinsic human need. Through a system of minute division of labor, wage contracts, and hierarchical structure of production relations, workers lose control of both the product and process of their labor. Moreover, they are separated from one another in these work tasks and placed in structurally antagonistic relations to one another in the competition for continued employment, seniority, and promotion in a way that maximizes the control function of the organization over its labor force. It is little wonder that recent studies of American workers at all occupational levels have found that the most oppressive characteristics of work are: "...constant supervision and coercion, lack of variety, monotony, meaningless tasks, and isolation. An increasing number of workers want more autonomy in tackling their tasks, greater opportunity for increasing their skills, rewards that are directly connected to the intrinsic aspects of work, and greater participation in the design of work and formulation of their tasks" (U.S. Department of Health, Education, and Welfare 1973: 13).

But why did the nature of work and its organization change historically to create this result? The usual answer to this question is that efficiency in production and technological progress made this result inevitable. That is, it is assumed that nineteenth century entrepreneurs adopted extreme forms of hierarchy and division of labor in order to reap the benefits of increased productivity which would, in turn, provide higher wages for the more "productive" workforce. Only more recently has this thesis been examined, and it seems to be rejected by two types of evidence. First, as Marglin (1974) demonstrates, the adoption of the hierarchical division

of labor in place of more traditional modes of production organization tended to precede technical change. That is, there was a move from the traditional workshop arrangement to the factory system without technological breakthroughs that would limit production only to the latter mode. Second, other types of work organization that increase the scope of worker involvement show levels of productivity that are higher than comparable firms characterized by the conventional hierarchical division of labor (Blumberg 1968; U.S. Department of Health, Education, and Welfare 1973: Chap. 4; Jenkins 1974). Such comparisons have not supported the productivity argument.

Thus the question is raised, why did the emerging system of industrial capitalism move in the direction of extreme hierarchy and division of labor? The answer seems to be that this form represents a natural device for centralized control of the production process and of the labor force (Marglin 1974; Gorz 1968; Gintis 1976). It was the organizational framework that evolved as a response to the need by the rising capitalist class to increase the amount of labor that could be obtained from each worker and to avoid work disruptions or conflicts. This can be seen clearly when one considers that under a system of wage contracts the worker sells his labor to the employer, but then it is the task of the employer to extract a maximum amount of labor from the worker in order to maximize the profit that he will make above his labor costs. The use of force to extract labor would disrupt the production process and run counter to even the most superficial democratic precepts. Therefore, employers began to evolve forms of work organization that would obtain the "voluntary" cooperation of the labor force under conditions where the employer could regulate the methods and rate of production and the hours of work of the workers. The hierarchical division of labor

represented a way of cementing centralized control over the production process while simplifying the task of supervision. The worker need not think for himself, or make decisions but need only follow prescribed routine. Once the advantages of this form of organization became obvious to capitalists and employers, it became increasingly adopted as the prototype for the factory system, and the attempts to formulate new technologies were predicated upon further divisions and sub-divisions of work operations and levels of hierarchy (Noble 1977; Haber 1964).

One of the most direct effects of such organization is that it keeps the bulk of workers located at the base of the pyramidal hierarchy, whose pay is lowest and whose work is most boring and routinized, ignorant of the production process as a whole. This ignorance forces them to accept the fact that decisions about their own productive activity must be made inevitably by those who are more knowledgeable in the rungs above them. While such workers can't aspire to any of the choicer jobs in the middle or top of the hierarchy because of a lack of training opportunities for such positions, there are usually mini-hierarchies within which some movement is possible. These mini-hierarchies or job ladders prevent workers from being completely frustrated as well as preserving the illusions of real mobility (Doeringer and Piore 1971). At the same time they encourage stable work behavior, since promotion along the ladders depends on seniority which is attained by doing an "adequate" job and not causing trouble. Further, since pay differentials between jobs at the top and bottom of these mini-ladders can be on the order of three to one, workers who have moved off the bottom rungs acquire a vested interest in preserving the system and they serve to legitimize the overall hierarchical structure of production.

Nor has the history of trade unionism had much effect on this overall pattern. The unions have had to play a dual role in representing their members. On the one hand they have existed as the organizational mechanism for enhancing the benefits of their members, but on the other hand their legitimacy in bargaining with the capitalist is derived from their ability to deliver the workers under the basic conditions of capitalist organization (Hyman 1974). Thus, the areas of negotiation are essentially circumscribed to ones of wages, fringe benefits, and safety requirements rather than matters relating to the ability of workers to reduce the alienation of the workplace and increase worker participation in production. In fact, most trade unions are themselves organized in the typical hierarchical manner with little grass-roots control (Aronowitz 1973), and they reflect more a corporate entity dominated by union "management" to counter the management of the corporate firm. Both the nature of the issues which are contested as well as the participation of workers in affecting the issues are limited to those on the corporate agenda.

In summary, the history of the present system of work and work organization is one based upon the hierarchical division of labor in behalf of the emerging industrial capitalist system. Such a mode of organization tended to maximize the ability of employers to extract labor from a stable and cooperative work force that could be manipulated to the needs of profit maximization. The emergence of Taylorism or "scientific management" in the latter part of the nineteenth century refined the application of technology to this mode of production with a system of production in manufacturing that attempted to subdivide operations to their most simplified components. This mode of production organization became the dominant one that was adopted by non-manufacturing enterprises as well, such as the production of government

and private services. Most important, the movement to hierarchical forms of production preceded the technological changes that reinforced the approach, so it is difficult to argue that the present forms of production were technologically-determined. Finally, modern trade unions have accepted these basic conditions of the workplace and have limited themselves to negotiations within the capitalist agenda of wages, hours, and other benefits that are extrinsic to the work process.

Historical Aspects of Schooling

Just as with the remarkable transformation of work that took place in the nineteenth and early twentieth century, so did profound changes take place in the way in which the young were prepared for work. At the time of the founding of the Nation in 1776, there was no extensive system of public schools, nor was schooling widespread. "The American's opportunity to obtain a formal education depended upon where he lived and how much money he had. Even an elementary schooling was not always available and seldom free" (Main 1965: 241). About a century later, three-fifths of the population ages 5-17 were enrolled in public elementary and secondary schools for an average school term of 132 days (U.S. Department of Health, Education, and Welfare 1976: 178), and many of the states had passed compulsory attendance laws (Landes and Solmon 1972). In 1920 all of the states had passed such laws, and almost eighty percent of the population 5-17 was enrolled for a school term that had risen to 162 days (U.S. Department of Health, Education, and Welfare 1976: 178). By 1972 the enrollment ratio of the 5-17 year old group approached 90 percent, and the school year had reached 179 days (ibid.). Three-quarters of the 18 year olds had completed high school and well over half of the high school graduates were enrolling in institutions of

post-secondary education (A. Cartter 1976:50). And by 1974 over ten million persons were enrolled in institutions of higher education, about triple the number who participated in this segment in 1958 (U.S. Department of Health, Education, and Welfare 1976: 187).

How was it possible that in less than two centuries formal schooling was to emerge from a relatively trivial role to one of the dominant institutions in the lives of youth? And, why was such a development necessary? The answer to these questions is especially puzzling when one considers that such basic skills as reading and writing were considered to be widespread in colonial America (Main: Chap. VIII; Lockridge 1974). Even among the very poor families, parents and the churches taught the young how to read and write, and the ownership of books -- especially the Bible -- as well as newspaper readership was extremely high (Main: 253-263). Thus, it is difficult to argue that the rise of the common school was stimulated by a high degree of functional illiteracy.

In fact, the expansion of schooling seems to be characterized by two rather pragmatic forces: (1) the desire of families for achieving social mobility through schooling and (2) the need for a new institution of socialization for preparing persons for the social demands and skills required by an industrial society. Even in revolutionary times, education was looked upon along with wealth as a prerequisite for political leadership and social rank (Main: 251). In addition, it was viewed as an institution that might provide the guidance to civilize men to their social responsibilities:

> Left to themselves they were ignorant and vicious men who contaminated children of the better sort and disobeyed the laws, and endangered the state. But good schools would save society, for even the poor were rational beings who might be guided rather than driven like beasts. Education would uphold law and order and protect the government (Main: 251).

The establishment of schools in the early nineteenth century was primarily a local undertaking rather than a broad and coordinated social movement. Based upon the tugs of the two motives of social mobility on the part of families and social control and citizenship training on the part of the "more enlightened" and wealthier classes, low-cost or free public schools were established in many cities and hamlets. But such schools differed substantially from locality to locality in the length of the school day and school year, curriculum, staffing and organization, and finance. In states such as Massachusetts they had become very common before the middle of the nineteenth century, while in other states and particularly in the South the existence of local schools was far more haphazard.

But, over time a relative uniformity in terms of school organization began to emerge so that by the latter part of the nineteenth century almost all of the states had made provisions for a state system of schools with a majority of states establishing compulsory attendance laws (Landes and Solmon 1972). By 1880 a majority of the population between the ages of 5 and 17 were enrolled in schools and the schools had taken on much of their modern appearance in that they were "...universal, tax-supported, free, compulsory, bureaucratically arranged..." and organized along both racial and social class distinctions (M. Katz 1971: 106). In understanding this transformation, it is important to note that the rise of the common school and its emerging uniformity coincided with a profound shift in the nature of American working life:

> In 1800 the typical American manufacturer was a master craftsman or mill proprietor, the typical employee a handicraft worker, and the typical plant a room or series of rooms in the craftsman's home or in a small building adjacent to a stream which supplied the power for more complicated manufacturing operations. In 1880 the manufacturer was likely to be a factory owner or manager, the employee a machine operator, and the plant a massive multistoried brick or stone structure driven by water or steam (Nelson 1975: 3).

Such a profound change in the locus and nature of work roles was bound to have a significant effect on the way that persons were prepared for the drastically-altered work system. This point becomes clearer if we examine briefly the way in which children were prepared for work in an earlier period.

In the early days of the United States, most production took place at the level of the family where the skills and occupational preparation that were necessary were inculcated in the household production of goods and services themselves. That is, the household represented the basic production unit in the sense that the family would produce most of its own needs as well as those goods or services which others would purchase. Thus, the entire family would assist in clearing and farming the land, and children would learn the necessary skills by participating at an early age. Artisans and merchants would also assist their children in obtaining the skills of their trades or callings, and youngsters who might choose different occupations could obtain apprenticeships as clerks and helpers. What is important is that both the production of goods and services and the reproduction of the forces of production such as the capital and labor skills necessary to create goods and services were both located at the household level rather than at the level of a large and impersonal firm. To a great degree, then, the educational needs of colonial youth were satisfied by their "on-the-job" training in the household as well as by the attempts of parents and the church to teach basic literacy skills.

But, as work became divorced from the household with the emerging factory system, the preparation for more traditional enterprises was not sufficient. Rather, the new industrial system required a highly disciplined worker who would adapt to the rigors of working in an impersonal environment where the nature of the job and the speed at which it would be executed

would be determined by managerial decisions as reflected in the machinery and in the technical and social organization and operation of the plant. He would have to accept the limits to his activity and indivudality set out by his role in a hierarchy in which authority derived from the level of the position in the factory rather than from such traditional criteria as age or patriarchal status. Moreover, he had to be thoroughly inculcated with such appropriate behaviors as working according to a precise schedule, doing exactly what was assigned to him even if it was boring and repetitious, and rejecting intrinsic satisfaction as a basis for working in place of rewards external to the work itself such as wages and steady employment.

But family relations and activities were not adequate to provide the experiences necessary to train this new type of worker (Dreeben 1968). Just as production activities were becoming increasingly divorced from the family, the family was also becoming an inappropriate influence for socializing the young to the emerging realities of the workplace. The lack of uniformity in the provision and form of education that prevailed in the early part of the nineteenth century began to give way to a mode of schooling that had as its center of gravity the common influence of the rapid growth of industry and its needs for a worker that was socialized to its organizational and technological requirements. It is our contention that the specific forms and uniformity that tended to characterize the schools by the end of the nineteenth century can best be explained by the important role that schooling had begun to play and would continue to play in preparing workers for industrial capitalism.[4]

In this respect the State of Massachusetts was a leader, highly emulated by the other states. Under the leadership of its Secretary of a new state Board of Education, Horace Mann, a unified and purposive pattern

of schooling was established.[5] By 1852, Massachusetts had adopted a compulsory education law for all children 8-14. Mann saw the schools as a basic force for social reform that required the participation of all children. Schools would become a powerful equalizer encompassing rich and poor in a common experience. Mann pushed for an increasingly centralized control of the schools by professionals and professional educators to replace the highly decentralized and non-uniform schools that had arisen in local communities. Just as the average size of the place of employment was increasing, consolidation of small schools took place to increase the average size of school plant.

In addition, important internal changes took place as the schools became graded by age and grouping practices were initiated with a standardized curriculum, textbooks, and standards of educational proficiency. Increasingly, the division of responsibility and function and hierarchical organization was replacing the more traditional one-room schoolhouse, a factor particularly prominent towards the end of the century as school boards became dominated by businessmen and professionals who were themselves imbued with the virtues of running schools according to modern, businesslike practices. By the latter part of the nineteenth century, rural populations and immigrants alike were fed into schools that would transform them into responsible workers for the ascending system of large-scale industrial production (Tyack 1974).

While the latter part of the nineteenth century saw the unprecedented expansion of the common school as well as its transformation into a compulsory, highly impersonal and bureaucratic institution much like the factories where many of its students would eventually work, it was not until the early part of the twentieth century that the educational implications of

"scientific management" were realized. By 1916, although businessmen and professionals represented less than eleven percent of the non-agricultural labor force, they accounted for almost eighty percent of the members of Boards of Education in a sample of 104 cities (Bowles and Gintis 1976: 190). Under their guidance the schools moved away from the concept of a uniform curriculum by initiating vocational curricula, particularly for the children from working class and immigrant backgrounds. Augmented by the rise of standardized testing and vocational counseling, students began to be assigned to different tracks or ability groups as well as to different curricula (Spring 1972). To a very large extent these assignments would determine the nature of the schooling experience in terms of occupational preparation as well as the amount of schooling that a child would receive. It is no surprise to find that instead of a common school experience received by all children as Mann had visualized, the schools prepared the children of workers and immigrants on the one hand and of professionals and managers on the other for very unequal positions in the occupational and work hierarchy.

Further, the method of financing education that was established by the early part of the twentieth century also supported this pattern where children in wealthy school districts received a more expensive education than those in poorer districts (Coons, Clune, and Sugarman 1970). By providing support for schools based upon local property wealth and guaranteeing to poorer school districts only a bare minimum level of financial support, the states constructed a systematic financial bias against the poor. The wealthier districts were able to provide educational expenditures for each student that were five or more times those that were available in poor districts. Segregation of the schools according to race was also practiced and legitimated by the U.S. Supreme Court in its 1893 decision on Plessy vs.

Ferguson. Thus discrimination against both blacks and the poor received official educational sanction among the schools as well as within schools where children of poor and working class backgrounds were more likely to be segregated and diverted to vocational curricula because of their low "abilities" as reflected in standardized tests.

The overall effect of these practices was to set out a system of schools that mirrored the conditions of the workplace. Both sets of institutions were hierarchical in nature with specialization of function and level. Both required that the student or worker follow a prescribed set of activities that were to be carried out according to the dictates of the institution, and both guided their members into appropriate behavior with the use of such extrinsic rewards as wages, promotion, and steady employment in the workplace and grades, promotion, and eligibility to participate in the most prestigious fields and institutions in the educational setting. The boredom of the workplace became mirrored in the boredom of the schools, as students pursued their schooling, not because of the intrinsic satisfaction received from their educational experiences, but because of the external rewards such as grades that they would receive in the short run and good occupational placements in the long run by following the prescribed regimen.

By the end of the first quarter of this century, the basic pattern of schooling had been established, a pattern which has been shown to be highly impervious to the numerous reforms that have been attempted which have been in conflict with the monopoly-capitalist mode of production. The reforms that were advocated by Dewey are nowhere in evidence in the schools despite the prodigious efforts of the Progressive Education Movement (Cremin 1964). In fact, the suggestions of Silberman (1970) for

humanizing education seem to be remarkably similar to the prescriptions that were set out by Dewey (1956) some seventy years before, but that never reached fruition. With the emerging maturity of U.S.industrial capitalism by 1920 (Nelson 1975), there would be little need for structural change in the schools until some future time in which the requirements of production might themselves change. Indeed, the history of educational reform in the twentieth century is one that is replete with examples of the resistance of the schools to alter their basic functions (Sarason 1971; Carnoy and Levin 1976).

This is not to say that there have not been changes in schooling or work over the last fifty years, but such changes have simply represented an extension of the pattern that had been established by 1920. As the economy shifted to the production of services and government activities, the same proletarianization of the work process that had swept industry was extended to other endeavors. The principles of the minute division of labor and the routinization of task were applied to the white collar worker and to the professional as well as corporate capital, and the state expanded its control over the economy (Braverman 1974). Moreover, the educational arena shifted to the post-secondary level, where a new system of educational stratification was established for the emerging expansion and stratification of white collar, managerial, and professional occupations. To a large degree this was effected with the corresponding establishment and expansion of a new unit in higher education, the community college which would provide a two year program of instruction with a vocational orientation for sub-professional positions. The community colleges along with a growing and highly stratified system of four year colleges and universities and graduate and professional schools provided a refined

credentialing mechanism for post-secondary education that corresponded closely to the positions of corporate occupational hierarchies (Karabel 1972; Bowles and Gintis 1976: Chap. 8). And within this overall context, it is hardly surprising to find that the efforts of the War on Poverty of the sixties to provide more nearly equal educational outcomes among children born into different social classes and races seem to have shown little effect (Levin 1977).

The Dialectical Mechanism[6]

In the previous section we reviewed briefly the histories of work and education with special emphasis on the changes that took place from the early nineteenth century to the early twentieth century. Salient characteristics of change in the workplace included the increasing size and centralization of the production unit as well as the movement towards a high level of bureaucratization of the production enterprise and the concentration of production under the control of relatively few economic entities. These changes were based on the development of a highly elaborated division of labor by which traditional occupations were increasingly sub-divided into a myriad of simple, repetitive tasks. And the labor force was transformed from a population of independent farmers, merchants, and artisans to a proletariat of wage and salary workers who provided labor to capitalist employers in exchange for wages while relinquishing control over the scope and nature of their work activities. Of course, these aspects of work have come to permeate almost all occupations and industries in the U.S. and Western Europe today including white collar work and the government sector (Braverman 1974).

Correspondingly, we focused on the rise of the common school with its

emphasis on compulsory, state-supported attendance in a uniform setting for all youth from a very early age until the post-adolescence period. Notable aspects of these developments included the centralization and professionalization of control and administration with an emerging hierarchy and specialization of curriculum and student grouping, the development of grading practices and standardized testing as objective bases for grouping and stratifying students into different curricula, and the establishment of vast disparities among schools and school districts in expenditures according to the social class origins of the student.

In this section we wish to demonstrate that these general structural aspects of both the educational and production processes can not be adequately comprehended as separate histories. They share a common set of forces emanating from the development of a wage-labor organization of production and its evolution under advanced forms of monopoly capitalism. Moreover, each set of structures has operated to facilitate the reproduction of the other, such that the joint configuration of production and educational structures attained a stability which could not be appreciated were the evolution of either to be viewed in isolation.

Correspondence and Contradiction

In this ensemble of social structures, it is important to distinguish several functions of the schooling process that contribute to the reproduction and expansion of the production process and its associated pattern of social relationships. First, schools produce general cognitive skills and some specific vocational skills that correspond to the skill requirements imposed by existing job structures. Second, schools produce those behaviors, habits, values, and awareness of social processes that predispose the student to

accept the conditions and social relations within which their skills will be utilized by employers. While it is possible to distinguish conceptually between the technical skills and the personality and consciousness attributes which render those skills useful to potential employers in the context of a given set of social relations of production, the two are not easily separable in practice. The production of skills in schooling processes never occurs outside of a social context itself in that knowledge is always learned within a set of social and organizational relationships (Dreeben 1968). Although other authors have debated the relative importance of these two functions (Bowles and Gintis 1976), we believe that such a distinction is artificial because they are inculcated and operate simultaneously. Accordingly, in later discussions of the functions of schooling, we will combine these two aspects.

A third major function which the schooling process performs is the differential socialization and certification for work roles according to class, race, and sex. Since the job hierarchy is characterized by great inequalities in required skills, attitudes, and personality attributes, differential preparation by the schools for jobs is already implied. But, the explicit listing of this third function expresses the additional fact that this differential socialization is not random, but occurs along pre-existing lines of social and economic stratification in the society so that females, nonwhites, and children from low income backgrounds will be prepared by their schooling for positions similar to those held by their parents and members of their sex and race.

Finally, it is important to point out the ideological role that schooling plays as the major route to social mobility for the vast majority of people as well as a legitimate allocator of adult attainments. The

highly rationalized appearance of the educational system in conjunction with its close acceptance by employers as a basis for making hiring decisions has tended to create and reinforce the credo that educational credentials represent a legitimate device for allocating individuals according to merit to the highly unequal positions of the income and occupational hierarchy. The widespread acceptance of this reality in conjunction with the expansion of schooling opportunities has reinforced the view that the allocation of persons to social positions is essentially a fair one through the educational system, and that social mobility is possible if only one has the ability and perseverance to acquire more education. To a large degree it is this view of reality and its associated incentives to obtain more and more education with each succeeding generation that reinforced the historical growth in educational enrollments, even in the absence of compulsion by the state.

In setting out these major functions of the schooling process in the reproduction of the production process and its associated structures, we do not mean to suggest that educators individually or as a group aim to fulfill consciously these roles. In fact, they may conceive of their actions as contributing to the development of students for the competencies that will be demanded of them. Nor do we imply that the present schooling processes will fulfill automatically and axiomatically all of these functions indefinitely. Indeed, we will show below that the schools are experiencing increasing difficulties in carrying out these historic functions.

The general apparatus through which schooling processes operate to reproduce society's labor power -- work skills, attitudes, and values -- roughly in the proportions and types required by the existing organization of production we shall term the principle of correspondence. On the most obvious level, the formal organizational structure of schooling institutions

corresponds in major respects to the formal organizational structure of work institutions (e.g., the patterns of authority and decision-making are centralized, hierarchical, and bureaucratic). Further, motivation to fulfill the work requirements is induced primarily by external rewards (grades or wages) rather than by the intrinsic satisfaction received from the activity. Students regularly move up ladders to a higher grade level on the basis of seniority. The schooling system as a whole is partitioned into distinct organizational levels whereby the nature of the tasks that are demanded at each successive level require more individual initiative, more creative applications of principles, and somewhat more individual autonomy over the details of the work process. Successively, fewer and fewer individuals move on to the more advanced levels.

It requires little imagination to see similar patterns in the job structure and in the nature of worker-task and worker-supervisor relations. It is reasonable to presume that these gross structural correspondences represent the most important linkage in acclimating the future workers to these patterns at an early age and in creating a natural transition to their inevitability and acceptance by the young. But the concept of correspondence embodies more than just the simple notion of a matching of structural and organizational characteristics of schools and work enterprises. It also embraces the content of work and schooling processes such that the combination of <u>form</u> and <u>content</u> of schooling processes tend to support the existing social relations of work, to reconcile children to the ultimate occupational positions that they will occupy within the work structure and to prepare them for the duties that will be associated with those positions.

As we set out briefly, the history of education in the United States is primarily a study of how correspondence emerged over a century or so of

struggles among different groups for different visions of a common school. Of particular emphasis is the evolution of the present educational system out of the quest for free public education by the urban laboring classes in combination with the efforts of employers and manufacturers to create a pool of literate and trainable labor imbued with steady work habits and an identification with the goals and methods of mass-production capitalism.

The key to understanding the establishment of correspondence is an appreciation of the centrality of the production process and its work roles in shaping images of the possible and desirable. This shaping process operates at both the conscious and subconscious levels (Marcuse 1964). The activities of the National Association of Manufacturers in support of vocational education in the early decades of the century illustrate a conscious effort to structure educational processes to correspond to the needs of capitalist production (Lazerson and Grubb 1974: Chap. 7). The opposition of the American Federation of Labor to vocational education was a stance that can be explained similarly on the basis of self-interest by craft laborers (Lazerson and Grubb 1974: Chap. 8). The deliberate pressures of organizations in attempting to mold education tend to occupy an important role in shaping the history of education, particularly at times of crisis and rapid societal change. But, the creation and reproduction of correspondence cannot be fully understood on this basis alone. The centrality of production processes asserts itself as well in a subtle and unconscious shaping of the mental images of the various groups and individuals within society with respect to what is desirable. Thus, they tend to contribute unintentionally to the maintenance of correspondence and the reproduction of existing patterns of workplace relations, even when their conscious intentions are quite different from their behavior (Kohn 1969).

For example, the establishment of centralized hierarchically controlled school systems with policy decisions and programs determined by "experts" was supported by many "progressive" members of the middle and professional classes, not out of desire to manipulate the knowledge available to the unskilled and semi-skilled laboring classes. Rather, support stemmed from a sincere belief by these groups in the principles of organization and the cult of efficiency that was being applied in industry and that was apparently sweeping the United States to the forefront of the World economy (Tyack 1974; Callahan 1962). Further, teachers are often unaware of the actual impacts of classroom life on children because their own experiences as both students and teachers have inured them to the process (Jackson 1968; Dreeben 1968; Sharp and Green 1975). Thus they often pursue rather mechanical, pedagogical roles without being conscious of the actual consequences.

Moreover, teachers who are interested sincerely in the welfare of lower class students may seek to inculcate behavioral traits and attitudes which correspond to those required in lower class jobs typically obtained by individuals from this background, not because they wish to reproduce social class from parent to child, but because they don't believe that such students have a realistic chance of obtaining better employment. Hence, they operate on the premise that it is better to prepare the students to accept and perform well on the jobs that they are destined to get than to create false expectations, frustration, and failure in an unachievable realm. This type of "unconscious" class reproduction also seems to be reflected in the roles that parents play in the occupational socialization of their own children. Lower class parents tend to inculcate in their children the values and orientations that they believe are successful in their own occupations. Thus the working class parent is more likely to provide the training that

is necessary for effective functioning in lower status operations, while middle class parents inculcate in their children those traits which are necessary for functioning at professional and managerial levels (Kohn 1969).

To summarize, the production process and its accompanying structures and pattern of social relations operate to pull the structure of schooling processes into correspondence with themselves through both the political process and through the less conscious and purposive actions of parents, teachers, and students. While the history of education is a chronicle of the efforts of various political groups attempting to formulate or modify schooling structures to reproduce the social relations of production according to their own interests, much of the correspondence is the result of actions far less conscious on the parts of participants. Indeed, the schools serve as an ideological representation of what is possible in the sense that to the vast majority of students and educators no realist alternative ever appears on the horizon. Therefore, while all manner of educational reform and change in educational methods might be debated, the implementation of whichever method is actually chosen tends ultimately to support existing production relations (Carnoy and Levin 1976).

But, we hinted that correspondence can deteriorate or break down completely, even if it has appeared to hold historically. An important question that must arise is how correspondence between education and work deteriorates. More specifically, why do the work structures on which correspondence is based change at all given that the mechanisms of correspondence serve to reproduce the needs of capitalist production. The answer is that given a particular set of work structures, the concept of correspondence illuminates the processes by which educational structures evolve. However, it sheds no light on the larger question of how the structures of

production tend to change. To understand these changes, we must understand the concept of contradiction.

Social institutions and structures change as a consequence of their internal contradictions. Any set of social structures which operate so as to produce by their own functioning the conditions which can impede the further reproduction of that set of structures is said to be in contradiction to itself. Since internal contradiction is viewed as a structural phenomenon, it need not be visible. That is, it can exist in a latent form, only to become manifest under certain conditions.

Examples of internal contradiction abound in the workplace.[7] For example, a highly rationalized, mechanized organization of production in which the component tasks have been simplified and routinized will reduce the labor time and cost per unit of output while cementing control of the production organization by its owners and managers. But, such an approach serves simultaneously to create boredom and resentment among the workers who are annexed to the various, tedious and stultifying tasks. The cost-saving aspects of such organization of production depend crucially on the continuous and rapid performance of the component tasks. Yet, the faster the pace of work that is required, the more tedious and burdensome the tasks become with a mounting resentment among the workers. Thus such methods of production organization tend to be internally contradictory because they generate forces that can impede the production process. In particular, the resentment and apathy which they foster among the workers assigned to the various tasks obstructs realization of potential, labor costs-savings and always threatens to break out in problems of quality control, sabotage, strike actions or other effects of worker unrest as well as other manifest forms of the contradiction.

Such situations of internal contradiction are the precondition of change within that set of structures (Mao Tsetung 1971). However, the existence of an internal contradiction, in itself -- that is in its latent form -- does not imply that a set of structures will immediately cease to be reproducible. The existence of the contradiction provides the potential for change, but the manifestation of the contradiction is required to impede the reproduction of the existing structure. In order to keep latent contradictions from manifesting themselves as obstacles to further reproduction, it is necessary to provide other structures outside of the contradictory set which will assure that the contradiction will remain latent rather than arising in a manifest form. For example, in the illustration that was given above, the opportunities for gainful employment and income may be so poor that there exists a group of workers who will endure the conditions of labor in a fragmented, routinized production process as an alternative to impoverishment or starvation.

Indeed, the historical correspondence of the schools with the developing requirements of the monopoly-capitalist workplace may be looked upon as a mechanism by which contradictions in production structures were mediated. In this context, the early habituation to routine and to performance of intrinsically boring tasks which schooling institutions provide, dampens later resentment of these characteristics of production processes and introduces the young to their inevitability. Finally, new structures may arise within or be appended to the internally contradictory set of structures to mediate the contradictions. For example, in the illustration given above, schemes of job rotation or the creation of incentive structures in which advancement is tied to seniority and steady work performance may be introduced and operate to reduce boredom or to diffuse resentment.

Accordingly, the reproduction of a set of structures may proceed over a long period of time despite the existence of internal contradictions if there exist structures either appended internally or that arise externally which mediate the contradictions. Nevertheless, as long as a contradiction remains in the sense that the basic structures persist which give rise to the contradiction, tensions, antagonisms and crises may be expected to surface periodically and threaten the continued reproduction of the basic structures. Indeed, an understanding of change, then, requires not just a knowledge of the circumstantial factors which trigger it, but also the underlying contradictions which impel it (Ollman 1971: Chap. 5).

With these concepts of contradiction, mediation, and correspondence, it is possible to formulate more precisely the thesis regarding the centrality of the work process and the dynamic relation of schooling structures to work structures. The focus on the centrality of the work process implies that any qualitative change in that process or in the production structure that defines the work process will ultimately initiate changes in the corresponding structures of society and particularly the schools. The correspondence principle implies or predicts that these changes in schooling structures will evolve towards ones that will support the new organization of work, although there may be an interim period of confusion, conflict, and struggle among various proponents of alternative reforms. We believe that the analysis of the formation and evolution of schooling in America and the failure of many educational reforms provides substantial evidence for viewing the work process as central to an understanding of the dynamics of educational change (Bowles and Gintis 1976). Further, we have asserted that the source of change in work processes lies in contradictions internal to their structures. From these premises it is apparent that an understanding

of the history of structural change and projections of future changes in schooling must proceed from a specification of the concurrent changes in work structures and the internal contradictions which generate them.

Although they are linked to the more general set of production and work structures through their historical development towards correspondence with those structures, schools are also partially autonomous from the workplace. Most important, they are neither governed directly by either individual industrial and commercial enterprises nor by the production sector as a whole. Thus they may develop, in part, according to their own dynamic, and some changes in schooling processes will not mirror in precise detail the associated changes in work processes. However, there are severe limits to these types of changes over the long run reflected in the limits placed upon the schools by the polities (Carnoy and Levin 1976), and these deviations will ultimately trigger reforms that will be designed to reestablish correspondence.

For example, schools could probably produce labor power for the production sector with considerably greater efficiency at considerably lower cost by eliminating courses in foreign languages, in music, and the arts and other such experiences. But, part of the traditional ideology of the school and its historical dynamic supports at least a smattering of these types of academic and cultural offerings and requirements as part of a legitimate schooling endeavor.

In addition, schools develop internal contradictions of their own whose resolution imparts a pattern of change that may deviate historically from the pattern of change in the production structure at some point in time. That is, this independent dynamic may lead schooling structures in directions which reduce their ability to prepare workers for the capitalist work system

and to mediate the inherent contradictions of the workplace. Under some conditions the schools may even reach the point of exacerbating those contradictions at least over the short-run before the forces outlined in the previous section pull them back into correspondence. That is, the schooling system may develop in such a way as to produce values, attitudes, and behaviors which are dysfunctional to the reproduction of existing structures and relations of production in work processes. For example, the emphasis on educational credentials as "objective" signs of superior ability and status leads students to a massive diversion of efforts into the attainment of these credentials rather than into developing the knowledge and abilities that the credentials supposedly represent. This behavior pattern inculcated by the schools creates an orientation in future workers towards the cultivation of appearances rather than the internal need to produce.

Thus while schooling structures, in general, correspond to workplace structures and relations, the strength of their correspondence may weaken over time or under certain conditions they may develop in such a way as to exacerbate the manifestations of contradictions in the workplace at least over the short run. There are several reasons for this. In the first place, the fact that production structures are internally contradictory means that schools must inculcate attitudes, values, and skills which may be internally inconsistent. For example, existing production structures rely on attitudes of individual competitiveness and drive for individual advancement to elicit high levels of work effort from employees whose work can't be supervised directly. But, cooperation and teamwork are sometimes necessary for the smooth operation and coordination of production processes and the avoidance of production bottlenecks. Yet it is difficult to inculcate individual competitiveness without at the same time creating a narrow egotism

and individualism which undermine the development of cooperative work patterns. Although the development of extracurricular sports programs as an attempt to channel individual competitiveness into team pursuits may address partially this inconsistency, the "extracurricular" nature of such activity means that it is not central and will not be experienced by the majority of students.

A second reason for the divergence from correspondence and mediation is the public nature of funding and administration of schools. In particular, the pattern of public sponsorship of the schools has been a necessary extension of the ideology that the schools exist to create social mobility and equality. In fact, it is this ideology that attracts many highly idealistic teachers and other personnel. While many of the efforts of such individuals serve to reproduce attitudes and values among students that correspond to the needs of hierarchical work structures, even if unintentionally, the fact that educational personnel often believe that the schools are agents of equality may also mean that they inculcate in their students some values which are dysfunctional to the reproduction of the work order.

Even more important, the existing hierarchical production structures require schools to produce relatively greater numbers of students who will be prepared for subordinate work positions and much smaller numbers who will have the attitudes, skills, and credentials for higher status jobs. But, the schooling system has been propelled by strong parental expectations and demands for increased educational attainments for their children in conjunction with being caught up in its own institutional ideology as a provider of equal opportunity. Thus there has been an enormous overexpansion at the college level with far more college graduates accredited and socialized for higher status jobs than the current job structure can absorb. This situation

has been created in both Western Europe and the United States.[8] Paradoxically, the phenomenon of overeducation has increased the likelihood of frustration and rebellion among workers as they find that they must accept jobs with lower pay, status, and responsibility than those for which their college or university background has prepared them. This is a matter that we will return to in the next section.

The possibility that schooling processes may deviate from the reproduction needs of capitalist production because of their own institutional dynamics has several consequences for a theory of structural change. First, it means that periodically there must be periods of educational reform and change in order to pull the educational system back into correspondence. Second, while changes in work structures depend largely on contradictions internal to the work process and its organization, the educational process can exacerbate some of these contradictions by failing to mediate them and even aggravating them.

In summary, at some points in history the educational system may tend to "trigger" change by exacerbating contradictions that are manifest in work processes even while fulfilling a general pattern of correspondence. We are suggesting that the relationship between education and work is a dialectical one. While the influence of the work structure has exerted constant pressures to maintain a corresponding educational structure for reproducing labor power for the capitalist mode of production, the educational system also has its own semi-autonomous dynamic which causes it to diverge in certain respects from the overall pattern of correspondence and mediation of the internal contradictions of capitalist production. At some point this divergence will trigger or exacerbate the manifestations of the contradictions in production, with deleterious consequences for the further

expansion of production and reproduction of existing relations. At that point, both the education and production systems will be characterized by "reforms" which will attempt to mediate the contradictions through alterations in the nature of work relationships and corresponding modifications in education. Over time this new phase of correspondence will begin to deteriorate only to initiate a new wave of reforms and syntheses of the old and new once again.

IV. OVEREDUCATION AND ITS CONSEQUENCES

In the previous section we set out an alternative formulation for understanding the relation between education and work. While the establishment and accommodation of the educational system to the demands for reproducing labor power for corporate capitalism have been a salient feature of that relationship, the underlying independent dynamic of the educational system represents the key to understanding change in both the workplace and the schools. In the earlier conflicts over the shape of the schools, a number of structural features of the educational system were established that must necessarily create a divergence between the schools and the workplace over the longer run. These features were necessary to create an ideology of schooling which would maximize the voluntary participation of citizens in both supporting the schools financially and politically and in increasing enrollments in the educational system, without relying strictly on compulsion.

Thus, the independent dynamic reflected in the independence of the educational bureaucracy from direct capitalist control emanated from the requirements that the schools mirror the structure of work organizations while appearing to be quite separate and insulated from such "crass" influences.

The cultural dynamic of the schools as reflected in its courses in the arts and literature was necessary for maintaining a semblance of the traditional academy to counter the obviously heavy hand of vocationalism that violated the classical view of education. The emphasis on stressing equality of educational opportunity and increased social mobility through the educational system were necessary to maintain an image of fairness and to stimulate the individual demand for schooling so that enrollments would increase on a voluntary basis rather than a compulsory one.

In summary, these independent dynamics arise out of the contradictory policies that created an historical patchwork of compromises in establishing a workable and stable educational system. On the one hand, it was necessary for the schools to respond to the powerful forces of the workplace, but on the other it was necesary to endow them with the image of independence, equality, and fairness in their operations. The internal contradictions created by this divergence between function and image must necessarily manifest themselves over the longer run. Indeed, this is a major reason that correspondence has broken down in some very crucial respects in recent years.

Divergence of Education and Jobs

Whenever the historical path of the educational system begins to diverge significantly so that it fails to mediate the contradictions of the workplace adequately or exacerbates those contradictions, there will be pressures on the educational system to change. Changes in the workplace may also ensue to mediate the manifestations of the underlying contradictions of capitalist work, and these will also have educational consequences. One of the most important of these divergences in recent years has been reflected in the

surplus of educated persons relative to the number of available jobs requiring high levels of education. Throughout both Western Europe and the United States, there exist large and apparently increasing numbers of educated-unemployed and underemployed persons. This phenomenon has an enormous potential for triggering reforms in both education and work, and it will be the focus of this section.

As we emphasized, an important component of the demand for schooling by individuals and families is related to their quest for social mobility. Higher levels of educational attainment are associated with better occupational opportunities and incomes, and the expectation of a better job and income are important factors which motivate students to obtain additional schooling. But, continuing correspondence between the educational system and that of production require that the number of educated persons that are produced at each level be readily absorbed by the occupational hierarchy in the sense that the particular skills, attitudes, behaviors, and expectations associated with each educational level will be matched by appropriate occupational opportunities that draw upon these attributes. Thus, the expansion of educated persons cannot exceed the expansion in the number of appropriate jobs for each level of education, without creating a mismatch between the proficiencies of the educated person and the characteristics of his or her job.

More generally, the occupational hierarchy at the upper levels must expand rapidly enough to absorb the increases in educated persons that correspond to those levels. In period of very rapid economic growth, a different problem may arise, but one that is more readily resolved. There may be a shortage of educated workers. In that case there is pressure on firms to train and upgrade existing workers and labor-market entrants to fill needed positions for which there are not enough candidates with appropriate

education and training. In contrast, it is far more difficult to set out policies which can resolve the problems of overeducation.

The seventies were a period of over-production of educated persons in the advanced capitalist societies. In particular, the educational systems were producing more persons with higher educational credentials than there were job opportunities that could utilize such training. The result is that unemployment rates of college and university graduates rose, and perhaps even more prevalent was the shift of such persons to occupations that did not require traditionally a college education.

According to the recent analysis of the Carnegie Commission on Higher Education (1973: Chap. 3) for the United States, there have been three distinct phases. Prior to 1950 it appears that the opportunities for college graduates kept pace with the supply with the exception of periods of severe economic dislocation such as the depression of the thirties and World War II. From 1950 to the middle sixties, the expansion of opportunities outpaced the increase in the number of college graduates. This represented a golden age of sorts for college graduates as their salaries rose at a more rapid rate than those for other groups (Welch 1970; Freeman 1976: Chap. 3). But, since the late sixties there has been a far greater expansion in the number of college-educated youths than in the number of appropriate jobs for persons with college-level training.

In contrast, by the late 1970's virtually all of the Western European countries and the United States were facing vast problems of youth unemployment and underemployment. Perhaps, more important, the education of these unemployed youth was at unprecedentedly high levels, and there were immense problems in even finding jobs for college and university graduates.

Moreover, many of the jobs that were available for the college graduate were at occupational levels which had been filled traditionally by persons with considerably less education. How did this situation arise, and what are its future consequences for education and work?

Causes of Overeducation

There are two principal underlying causes of the overeducation phenomenon. The first is a relative decline in economic growth generally and in the shift to higher status occupations specifically, and the second is the large increase in the number of educated persons entering the labor market. Let us review briefly each of these in turn. The provision of increasing numbers of professional and managerial occupational positions depends crucially on growth in the economy and shifts in the structure of the economy towards industries that use these types of personnel. While economic expansion was an important factor historically in increasing the numbers of high level positions, and it was a particular crucial factor in the post-World War II period, the rate of economic growth has declined to levels that are considerably below historical growth rates.

By the early seventies, not only had the shorter run effects of a world business recession taken their course, but a number of longer run factors have suggested that economic growth rates will not approach again the rapid expansion of the post-World War II period.[9] These factors include the problems of shortages and rapidly rising costs of energy and other non-renewable resources, chronic problems of inflation, increasing capital requirements, falling rates of profit on investments in the developed countries as a result of over-accumulation and saturation of markets, and rising investment opportunities in the third world with their large pools

of low-wage labor and few inhibitions on the despoilation of their environments. All of these factors taken together suggest that the economic growth of the post-war period that provided such an important source of expansion of managerial and professional positions for educated persons is not likely to be repeated in the foreseeable future.

Further, historically all of the advanced capitalist countries experienced a profound shift from agriculture to manufacturing and in more recent years to the services. With these shifts came concomitant occupational movements from farmwork to blue collar jobs and to white collar employment and an expanding managerial and professional component in the workforce. For example, in 1900 about 10 percent of both the male and female labor force were found in managerial and professional occupations in the U.S. (Gordon 1974:28). These proportions had risen to 14 percent for males and 16 percent for females by 1940 and to 28 percent and 19 percent respectively by 1970. However, since 1970 there has been almost no increase in this ratio, suggesting a growth rate in these occupations that has slowed to that of the U.S. labor force generally (Employment and Training Report of the President 1976:235). Moreover, as Freeman (1976:64-69) has noted, the growth of industries that utilize college-educated persons will be especially sluggish in comparison with the unusually high growth period of the sixties.

In summary, the slower pace of economic growth in the United States and Western Europe in combination with a particular decline in the expansion of those industries that are education-intensive suggests a slackening demand for the college graduate relative to the immediate past. This situation differs from the very rapid increase in professional and managerial opportunities that followed World War II.

In contrast, with the reduction in the expansion of appropriate jobs,

the number of persons entering the labor market with college credentials has increased substantially. In both Western Europe and the United States, the number of youth of college or university age have reached unprecedented levels because of an earlier baby boom that created this demographic bulge. While the effects of this demographic phenomenon are likely to subside in terms of its impact on increasing the numbers of college-educated workers, other effects are likely to increase both aggregate participation in post-secondary education and in the labor supply of such persons.

These other factors include the high levels of university enrollments stimulated by the reforms of the secondary school in Western Europe and by the declining value of the secondary school certificate in both the United States and in Western Europe. As college educated workers are forced to take jobs that would have employed secondary school graduates, the prospects for the secondary school graduate have been declining at an even more rapid pace. In the United States, the private rates of return for a college education appear to have been holding steady or even increasing as salaries for college graduates have risen at a slightly faster rate than for high school graduates and as unemployment rates have risen at a slower rate (Grasso 1977).

Finally, not only might we expect high enrollment rates in colleges and universities to hold those levels or even increase as the economic prospects for lower levels of education decline, but an increasing portion of college graduates are likely to enter the labor market. There are two reasons for this. First, there has been a secular trend in both the United States and in Europe for women to increase their labor force participation.

Thus, more college educated women will be entering the labor market than in the past to compete for available jobs. Second, there is an independent effect of the job shortage that will reinforce this effect. With

difficulties in obtaining high remuneration for male college graduates, there will be greater pressures for their wives to work to assist in maintaining a middle class living standard.

In summary, the expansion of college level training is likely to persist or taper off at very high levels so that a very large proportion of the entering work force will have received some post-secondary training in both Western Europe and the United States. In contrast, only a relatively small proportion of new jobs will require the types of skills and personality traits associated with that level of education. The result will be that a very large number of youth who will be entering the labor market will find that their job expectations will not be satisfied by available opportunities and that they are overeducated relative to the requirements of their work.[10]

Overeducation and Unfulfilled Expectations

Overall, then, the long run picture suggests that college graduates are likely to have greater expectations with respect to their occupational attainments than the labor market can fulfill. In the past there was the expectation that if one obtained the appropriate level of education, one could also attain an occupation that was consonant with that level of education. To a large degree that set of expectations still seems to be evident as reflected in the occupational aspirations of youth. Table 1 compares the occupational aspirations of a national sample of U.S. high school graduates of 1972 with the occupational pattern in the labor force for both 1972 and projections for 1985. Even two and one half years after leaving high school (after participating in either the labor market or college or both), about half of the respondents aspired to professional and technical careers. But, such occupations accounted for only about 14 percent of

Table 1

Occupational Aspirations of High School Class of 1972 During Their Senior Year and 2 1/2 Years Later, and Composition of the Labor Force by Occupational Group: 1972 and Projected to 1985

Occupational Group	Percentage Distributions			
	Occupational Aspirations of the High School Class of 1972[1]		Labor Force	
	1972 in high school	1974-2 1/2 years after leaving high school[2]	1972 actual	1985 projected
Total[3]	100.0	100.0	100.0	100.0
Professional and technical workers	54.0	49.9	14.1	16.8
Clerical workers	16.0	12.7	17.4	19.4
Managers, officials, and proprietors	5.0	11.7	9.8	10.3
Service workers	7.0	4.9	13.5	13.2
Sales workers	3.0	1.9	6.6	6.4
Craftsmen	8.0	9.6	13.2	12.8
Operatives	2.0	4.0	16.5	15.1
Laborers and foram workers	4.0	5.3	8.9	6.0

1. Based on responses to questions asking what kind of work respondents would would like to do (1972), and what kind of work they expect to be doing when they are 30 years old (1974).
2. Preliminary data. Estimates are unweighted.
3. Percentage distributions may not add to 100.0 because of rounding

Source: U.S. Department of Health, Education, and Welfare National Center for Education Statistics, National Longitudinal Study of the High School Class of 1972, preliminary data and U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, 1972-73 and 1973-74 editions as printed in U.S. Department of Health, Education, and Welfare, Office of Education, The Condition of Education 1976, p. 245

positions in the labor force in 1972 with a projection to about 17 percent some 13 years later in 1985. In contrast, far fewer respondents aspired to the lower-level occupations, even though there were relatively more positions in the labor force in these areas.

With additional years of schooling, individuals expect that the jobs that they are able to obtain correspond to their higher educational status. Not only are there prestige differences in terms of occupations that have required traditionally more education (Duncan, Featherman, and Duncan 1972), but there are substantial differences among occupations in income (Sewell and Hauser 1975) and in fringe benefits, employment stability, working conditions, and independence (Duncan 1976). Thus the question that arises is what will be the consequences of such expectations if they are left unfulfilled.

Before talking about these in concrete terms, it is important to note the context in which job dissatisfaction by the young over-educated worker is viewed. In the past, economic insecurity seemed to be a dominant factor in the adaption of workers to jobs that were below their expectations or which were intrinsically distasteful. Moreover, the possibility of future upward mobility gave at least a hope that things might become substantially better through conscientiousness and hard work. But, recent surveys have shown some rather distinct breaks from the past, partially due to the higher educational levels of youth and partially to the objectively better economic circumstances of a society with unemployment insurance, public assistance, and other kinds of economic cushions. An extensive survey of U.S. college seniors in 1972 summarized:

> In work attitudes and perceptions of the most salient characteristics of work, students see themselves as being

> quite different from their parents. Two significant and striking differences emerge when students are asked to compare their work needs with those of their fathers. Students see themselves as being far less concerned than their fathers with earnings and security and much more concerned with the nature and purposes of the work. Students stress the more altruistic and intrinsic aspects of the job. They seek interesting work which will be useful to society and of benefit to others, will allow them to express individuality, and will enhance individual growth (U.S. Department of Labor 1974:4).

These views are further reinforced by the public opinion polls of U.S. youth and particularly the trends in the data. For example, based upon comparative studies between 1967 and 1973, Yankelovich (1974) found that:

> Today's generation of young people is less fearful of economic insecurity than generations in the past. They want interesting and challenging work, but they assume that their employers cannot -- or will not -- provide it. By their own say-so, they are inclined to take "less crap" than older workers. They are not as automatically loyal to the organization as their fathers, and they are far more cognizant of their own needs and rights. Nor are they as awed by organizational and hierarchical authority. Being less fearful of "discipline" and the threat of losing their jobs, they feel free to express their discontent in myriad ways, from fooling around on the job to sabotage. They are better educated than their parents, even without a college degree. They want more freedom and opportunity and will struggle hard to achieve it (Yankelovich 1974:37).

In summary, the prospect of job dissatisfaction and its possible deleterious consequences for productivity seem to be increasingly related to the disparity between rising expectations for better jobs and the available job opportunities, and there is reason to believe that this is equally true for Western European youth.

Education has been found to be related to job-dissatisfaction in a number of studies. The most thorough examination of the relationship between education and job satisfaction was carried out by Quinn and Baldi de Mandilovitch (1975). Using the extensive data from the 1973 Quality of Employment Survey as well as sophisticated statistical techniques to attempt to isolate the relations of education and job satisfaction, they found that:

"The most dissatisfied workers were those who were too highly educated for their jobs" (p. vii). In a related study, Kalleberg and Sorensen (1973) found that workers whose educational levels exceeded the estimated educational requirements for jobs showed higher levels of job dissatisfaction. Thus the evidence points consistently to the probability that as the discrepancy grows between the job expectations of the young and increasingly educated entrants to the labor force and the actual jobs that will be available, the dissatisfaction of this group will increase.

Job Dissatisfaction and Implications for Production

But, if job dissatisfaction is a rising function of the discrepancy between the educational requirements of existing jobs and the rising levels of educational attainments and job expectations of the young, it is important to ask what implications such dissatisfactions have for work organizations. While there have been only a small number of studies that have addressed this issue in a systematic way, there are a number of investigations and other evidence that suggest that such dissatisfactions will have a negative impact on productivity. It is important to mention that there are few accurate indices on the extent to which such factors as employee turnover, alcoholism, absenteeism, drug problems, sabotage and related problems of quality control, or wildcat strikes have changed over time generally and virtually no information on such changes for those occupations and industries that have been most impacted by young and over-educated workers.[11] The result is that it is difficult to relate rises in overeducation to such costly problems as work stoppages, deterioration in quality control, and employee turnover or absenteeism.[12]

The problem of linking changes in the proportion of overeducated

workers to longer term changes in worker behavior is further compounded by the effects of the business cycle. During periods of recession, the low demand for labor and high rates of unemployment will tend to discipline the work force. The lack of alternative employment will tend to reduce worker disruption, turnover, and absenteeism. Thus while employee absentee rates rose from 1967-1970, they seem to have leveled off or even fallen during the recent recession (J. Hedges 1973 and 1975). Obviously, it is the longer run changes that are of interest in looking at the overeducation issue rather than the short run, cyclical changes. A related problem is the lack of consistency in both concepts and operationalization of such terms as employee turnover or absenteeism as well as other measures of worker dissatisfaction and behavior. Different studies on the subject have viewed the phenomenon and its measurement in different ways, and statistical studies that have looked for relationships have varied considerably in their rigor.[13]

However, there is considerable support for the view that job dissatisfaction is directly related to both absenteeism and turnover.[14] Moreover, the view is intuitively compelling, although the relationship is probably a complex one that requires an improved understanding of both social-psychological dynamics of the workplace as well as the research operationalization of these concepts (Brayfield and Crockett 1963; Srivasta et al. 1975).

More direct ties between overeducation and indices of employee productivity such as employee turnover have been reviewed by Berg (1970). In general, he concludes from a variety of evidence that overeducation may have deleterious consequences for production. The most ambitious study that explored the connection between hiring standards and actual job requirements (Diamond and Bedrosian 1970) was carried out for ten major "entry and near-entry" jobs in each of five white-collar and four blue-collar occupations

as well as one service occupation for twenty groups of establishments among fourteen industries in two metropolitan regions. The authors found that hiring requirements were unrelated to job performance across cities, industries, or companies, and for some seventeen of the twenty samples there was little or no difference in job performance associated with the level of educational attainment of the worker. But, the differences between the hiring standards and the actual requirements needed for the jobs "...appeared to be an important cause of costly turnover in a major segment of virtually all of the 20 groups" (p. 7).

Moreover, recent survey results suggest a relationship between job dissatisfaction and both industrial sabotage and drug usage within the workplace. Quinn et al. (1973) investigated these linkages with data from the extensive Quality of Employment Survey. They found that workers' reports of industrial sabotage were most common among dissatisfied workers, young workers, and men (p. 40).

These findings also comport with the few case studies of work organizations characterized by rising numbers of young and more highly educated workers. Perhaps the most poignant of these cases is the experience of General Motors with its newly situated Vega plant at Lordstown, Ohio. Its relatively highly educated and young workforce responded with wildcat strikes, sabotage, high absenteeism, drugs, and other disruptive activities to attempts by management to tighten worker discipline and to increase production levels to the designed capacity of the plant (Aronowitz 1973: Chapter 1). A similar picture is described for a steel mill (Kremen 1972), and a more general pattern is described by the Work in America Report (U.S. Department of Health, Education, and Welfare 1973) with high estimated losses in productivity for both businesses and government (Walton 1976).

In summary, we have suggested that the rising levels of overeducation for the available jobs in conjunction with relatively high levels of affluence are tending to create increasing problems for the production of goods and services in the United States. The higher levels of education of youth are spawning enhanced expectations for jobs that will confer high status, income, and responsibility. But, the expansion of such occupational positions is falling far short of the increases of college-educated youth, and there also appears to be a tendency for existing professional and managerial jobs to become more routinized or proletarianized over time. (Braverman 1974; Bright 1966). It is expected that these contradictory dynamics will create increasing dissatisfaction in the workplace as expectations are frustrated and these frustrations will threaten productivity by increasing the level of disruptive behavior among workers.[15]

Implications for Reform of Education and Work

As we emphasized at the beginning of this section, the independent dynamic of the educational system has implications for changing both work and education. As the educational system diverges in a variety of ways from its earlier pattern of correspondence, it begins to fail to mediate contradictions. The expansion of the system of education to satisfy the ideology of social mobility through educational mobility is an important example of a phenomenon which will ultimately provide a disruptive effect on production if permitted to continue. Of course as the threats to productivity and the symptoms of worker unrest increase, there will be a variety of attempts to stem the divergence of schools and firms through reforms of both the workplace and education. In particular, both the state and capitalist enterprises will attempt to alter the system of educational

organization and that of work in order to once again establish a smoother pattern of correspondence between the two institutions. And, many of these reforms are already in evidence.

On the side of the workplace, there are increasing attempts to change the organization of work. These include attempts to humanize work and to increase worker participation at the various organizational levels as well as to provide educational sabbaticals for workers to "retool" their skills and refresh their spirits. On the educational side there are attempts at disrupting the normal educational pattern by spreading education and training over a lifetime through "recurrent" or "lifelong" education while reducing the demands for conventional academic credentials. In addition, there is a major trend towards emphasizing career education, an attempt to integrate more closely the workplace and the school. This latter movement is comprised of a large number of reforms of curriculum content, counseling, and organizational change in the schools. In the following sections we will review some of these changes.

V. THE MOVEMENT TOWARD WORKPLACE DEMOCRACY

In previous sections we maintained that the educational system is no longer able to mediate the contradictions of capitalist work and that the independent dynamic of the educational system has even acted to increase disruptive and conflictive behavior in the workplace. In particular, young workers with relatively high educational levels who have not experienced economic deprivation are likely to reject increasingly both the types of jobs that will be available as well as the overall controlling conditions of the work setting. Symptoms of this malaise will be reflected in rising incidences of worker turnover, absenteeism, sabotage, wildcat strikes, quality deterioration of product, and challenges to discipline and existing work organization. And, these matters will not be ones that will be resolvable through normal collective bargaining with trade unions. Such threats to production and productivity will have high potential costs, and the pressures exhibited by both managers and workers to reorganize or reform the workplace will be intense.

Types of Workplace Reforms

It is important to be more concrete about what is meant about reforms of the workplace. Since the word reform is often used to refer to quite different things, we will attempt to utilize it more precisely by referring to two types of workplace reforms, technical and political ones. Technical changes refer to those alterations of the workplace that can be carried out without changing the governance of the firm in terms of the allocation of decision-making authority. Such reforms can include the redesign of jobs to make them more interesting or the use of flexible working schedules where employees can set their own hours. They can encompass changes in the physical work

environment or policies of organizational development that improve communications among employees. All of these are considered to be technical in nature in that the existing management can make the decisions and hire the appropriate technical specialists to design and implement the changes.

In contrast with the technical category, political changes in the workplace refer to those that alter the governance or decision-making framework. These, in turn, can be divided into micro- and macro-political reforms where the former denotes changes in the internal decision-making of the work enterprise, and the latter refers to modifications of the external or overall governance of the firm. It is useful to review each of these political categories of reform in greater detail, since we will suggest that they represent the categories of response to the present threats to productivity by "overeducated" workers.

Micro-political changes represent alterations in the internal decision making of the work enterprise that increase the participation of workers in matters which affect the nature and organization of their work. The political aspect of these modifications is due to the inherent change in the distribution of power over the particular decisions that are included in the reform. In these cases some traditional managerial prerogatives are relinquished or shared with workers. The micro-aspect of this category refers to the fact that such increases in worker participation are limited to a specific set of factors that govern the execution of the work rather than encompassing those macro-political dimensions that govern the operation of the organization itself. Thus, the typical micro-political modification of the work enterprise will increase the participation of workers in determining such matters as production schedules, training regimen, work assignments, and work methods. However, such changes will not affect the overall

control of the organization as reflected in decisions on the choice of products or services to be produced, pricing policies, investment plans, distribution of profits, or overall organizational structure. In summary, micro-political changes tend to increase the participation of employees in those decisions which affect the nature and performance of their jobs within the overall governance structure that defines the operations and purpose of the enterprise.

A general term that is used to describe attempts to increase worker participation in what are traditionally thought of as managerial functions is that of job enrichment (H. Rush 1971: 13-14). This approach is based largely upon the work of Herzberg (1966) and Argyris (1957 and 1964) which argues that the most important motivating factors of a job are those which provide intrinsic rewards to the job-holder such as feelings of achievement, personal recognition, control of the work process, and responsibility. Job enrichment approaches assume that workers can be more highly motivated by increasing the content of vertical or hierarchical responsibilities of the job such as planning, organizing and evaluating the work in addition to performing it.

One of the most important applications of this concept is that of the autonomous work group. This approach divides the functions of the organization into relatively small work groups that make decisions on how the work will be performed. The assumption is that most employees can relate much better to a small and identifiable group of which they are members than to a large impersonal organization. This attachment to the group and the high level of communication and interaction among its members fosters the ability of the group to make internal decisions about how the work will be performed. While the group is accountable to a higher level of management for its overall performance, the internal assignments, scheduling, training, and

consideration of new work practices are relegated to the work group itself. Much of the development of these ideas has been carried out by several researchers at the Tavistock Institute in London along with colleagues at the Work Research Institutes in Oslo (Herbst 1962; Emery and Thorsrud 1969).

The illustration of changes in Swedish automobile manufacture provides a good example of these types of changes in decision-making (Gyllenhammer 1977). While the shift from assembly lines to work teams is one that is based upon technical redesign of the organization, it also represents substantial micro-political changes based upon the ability of groups of workers to determine within reasonably broad limits the organization of their work. The Swedish example also shows the degree to which various work reforms may fit into more than one subcategory of the classification scheme. In particular, the "political" types of reforms almost invariably have technical implications, although the opposite is not necessarily true. Many technical changes in jobs can be carried out without affecting the pattern of decision-making.[16]

In addition to the approaches that increase the direct participation of workers in the decisions that affect their work activities, there are other forms of participative management. Perhaps the most important of these is the use of worker councils or committees that are elected by workers or appointed by workers and managers to resolve jointly with the management some of the major policy issues regarding the work setting (Jenkins 1974a: 68-72). To a large degree this is the <u>de facto</u> approach used in British industrial relations where the shop stewards represent the unionized workers with respect to management-worker conflicts and changes in employment and work practices. While this process has evolved in the British case as part of the normal industrial relations practice, the use of worker councils as

a participative mechanism by management is being considered increasingly in enterprises in the United States and Western Europe. As we will note in the next section, the workers' council also represents the basic building block of the Yugoslavian macro-political model.

Macro-Political changes include those modifications that are designed to give workers a greater measure of control of and participation in the work enterprise as a whole, rather than just within their own work units. While the micro-political changes include only internal modifications in the distribution of decision-making roles, macro-political alterations encompass changes in the governance and direction of the total work organization itself. In principle such reforms can increase the participation of workers in virtually all the policies of the firm from internal work practices to the selection and marketing of products, determination of prices and investment policies, and allocation of profits or surpluses. At least these are the possibilities represented by such changes in governance.

The specific form of any macro-political reform is crucial in determining the nature of the results. This is especially evident in the case of employee ownership. In some ways this would seem to be the most far-reaching of the macro-political changes, in that employee ownership should vest in the employees the rights to govern their own work organization and the nature of the work situation. But, in fact, employee ownership may have little to do with employee participation in management.

There are at least two general forms of employee ownership, the first being management-initiated and the second being worker-initiated. Management-initiated types of employee ownership usually consist of a program in which part of the remuneration of employees is offered in the form of stocks or options to purchase stock on the basis of seniority, salary, or position.

In other cases, the employees acting as a group purchase the firm by obtaining a loan that is repaid out of profits. Perhaps the best known plan for making such a transfer in the U.S. is that of the Employee Stock Ownership Plan or ESOP which will be discussed in greater detail in a subsequent section.[17]

Typically, management will choose the first of these plans as a means of supplementing wage and salary benefits while building a mechanism to increase employee motivation and productivity. The second of these is usually adopted primarily as a means for increasing the amount of capital in the firm which is an intrinsic attribute of the ESOP approach. Accordingly, it is not surprising that management-initiated plans to increase employee ownership do not construct a mechanism for the employees to participate in the management of the firm. Indeed, it is probably safe to say that in a majority of these cases the employees seem to be content to leave these decisions to traditional managerial hierarchies with the tacit view that professional expertise is necessary to obtain maximum growth and returns to their stock ownership.

In contrast, employee-initiated ownership plans almost invariably result in direct or representative participation in governing the work enterprise. The most typical approach is that of the producers' cooperative in which the members both own and manage the organization. Such organizations can be created initially in a cooperative form where the members or employees are required to invest in the enterprise, or they can derive from the conversion of conventional firms to the producer cooperative mode (P. Bernstein 1974; Carnoy and Levin 1976A). In these cases, the workers exercise control of both the internal organization of work as well as levels of remuneration, product planning and development, marketing, pricing, and other functions. In capitalist societies, the producer cooperative represents the most complete

form of macro-political reform vis-à-vis the traditional capitalist relationship.

A second macro-political reform is the inclusion of worker representation on corporate boards. This form of macro-political change is especially important in Western Europe. For example, in the Federal Republic of Germany, a policy of co-determination or Mitbestimmung has been adopted that requires from one-third to one-half of the places on the governing boards of firms to be delegated to workers (D. Jenkins 1974a: Chap. 8). This approach would be somewhat equivalent to requiring that corporate boards of directors in the United States have significant proportions of worker representatives. The Commission of the European Economic Community or Common Market has also indicated a movement in this direction with the recommendation of a statute in June 1976 that would require co-determination and workers' councils for companies operative in two or more members countries. (Doc. COM (76) 253 final, June 3, 1976.) In addition, a British Commission on Industrial Democracy has recommended recently that the governing boards of all British firms employing more than 2000 persons be required to include elected worker representatives (Department of Trade 1977). While worker representation on the Board of Directors is clearly on the upswing in Western Europe, it is not clear that the co-determination approach has had much of an impact on the nature of work and work organization, and the policy is exceedingly controversial with respect to its impact.[18]

A third form of macro-political work reform is that of worker self-management under conditions where the enterprise is not owned directly by the employees. This particular situation is relevant especially to the public sector, where the focus of the approach is on the direct power of workers to govern their own work organizations. This mode of control can

take many forms, but the Yugoslavian version is the most highly developed. The Yugoslavian model is based upon workers' councils that make the major policy decisions for the firms. Among small enterprises (less than thirty employees), all of the workers are members of such councils; and among larger enterprises, the councils are elected by the workforce. The council holds all formal power, and it makes decisions regarding hiring and firing, salaries, investment, and other operations of the firm.[19] Unlike some of the forms of worker participation that were referred to in the micro-political category where workers and work councils are accountable to management, under the Yugoslavian arrangement the management is accountable to the workers. Such managers are appointed by the elected representatives of the central board of management. The personal income of the workers is dependent both upon the overall success of the enterprise as well as the contribution of the individual towards that success, although a minimum income is guaranteed to the individual independent of these criteria.

Various versions of worker self-management are also found in China, Cuba, and Israel. In both China and Cuba there is emphasis on direct participation in management and operations, rather than participation through representation. All members of the work enterprise are expected to play active roles in contributing to the formation of the work process. (C. Bettelheim 1975 and A. MacEwan 1975.) The Israeli kibbutz or collective is another well-known example of macro-political worker control, where all decisions about production and the distribution and use of productive surpluses are made by the membership. The traditional work hierarchy is eliminated in favor of a democratic mechanism for making collective decisions regarding both production and consumption. (D. Jenkins 1974a: Chap. 6; K. S. Fine 1973.)

A final category of macro-political reform is that of nationalization of industry. This change refers to the transfer of a firm or industry from the private to the public sector. Such a transfer has obvious implications in terms of an alteration in the governance of the work organization. The exact forms of change will depend crucially upon the nature of the transfer and the political context in which nationalization takes place. At the one extreme, a traditional corporate management might be replaced by a traditional government bureaucracy, with no significant modifications in the organization of work. Indeed, it has been argued that from the viewpoint of the workers, nationalization can reduce the possibilities for change rather than increase them. Certainly, this has been one of the major criticisms of the state socialist societies of the Eastern Bloc. On the other side, it is possible to construct a scheme of nationalization that integrates worker participation in the decision-making apparatus such as that of Yugoslavia. Again, the exact form and implications for modification of the workplace will depend crucially on both the national and historical context.

In general, macro-political organizational reforms represent the most far-reaching possibilities for changing the nature of work organizations to increase the participation of workers in affecting the nature of their jobs and their work relationships. That is, with major changes in the overall governance, corresponding modifications can take place in internal governance and in the technical arrangements of work organization. Of course, as noted, this hierarchical approach to describing work reforms from micro-technical ones to macro-political changes tends to subsume the former categories under each successive classification, although there may be exceptions to this generalization. For example, employee ownership may change none of the characteristics of the work organization beyond who receives the dividends,

and profit-sharing plans or co-determination may also have no effect on the nature of work.

WHICH REFORMS ARE MOST LIKELY?

The classification scheme that we have presented gives some indication of the variety of possible work reforms that might be considered as alternatives to the present organization of work. However, this does not mean that they are all equally likely to be adopted in the future. First, it should be borne in mind that each form of work organization arose under a concrete set of historical conditions and within a specific cultural, political, and economic context. The conditions that will support any particular approach will not necessarily be present as reforms are considered. For example, it is probable that the Yugoslavian method of work organization in its existing form is only possible within a national system of decentralized socialism. Thus, the classification represents a theoretical set of alternatives, but the actual alternatives must necessarily be constrained by the particular context.

A second point that is worth mentioning is that the attempt to change a basic social institution like the workplace or school is replete with trial and error and struggles among groups with different interests. This means that such reforms might follow a pattern that is rather unstable in the short run with failures and new reforms attempted until a longer run stability is achieved. For example, enterprises may attempt to provide technical reforms without increasing worker participation, only to find that these types of changes do not alleviate the problems towards which they were addressed. In that case, the next step might be an attempt at a micro-political change in work organization. Alternatively, a micro-political

reform might be attempted that creates new problems in the work organization such as the rising dissatisfaction of middle managers who get "squeezed" between worker decisions and executive decisions. In that case, the firm may decide to seek a different participative approach that avoids this problem or to step away from micro-political reforms.

That the process of change is not a linear and smooth one is evident from our dialectical approach. However, in the short run the types of changes that will be tried and the struggles that will ensue will depend upon a number of factors. These include the matter of who takes the initiative: management, workers, trade unions, or government. For example, it is likely that management will take an incremental approach to change, beginning with the change that will encroach least upon managerial prerogatives, while workers will attempt to obtain those changes that maximize such encroachments (A. Gorz 1968). But, the important point is that the following analysis is not designed to predict the precise nature and direction of these short run conflicts as much as it is to predict the types of changes that are consistent with a longer run structural solution of the conflicts. Of course, as we will emphasize at the end of this section, even the longer run equilibrium will eventually decompose under the dynamics of the dialectic, as long as the internal contradictions of capitalism persist. In that sense, today's solution will become tomorrow's "problem."

Thus, we must ask the question of what types of changes will contribute to mediating the contradiction of the workplace so that production proceeds smoothly and profitability is maintained. A useful way of answering this question might be to review the criteria of a good job set out by workers and potential workers and to contrast these with the requirements of firms. Following this it is possible to review the role of trade unions and

government as intermediaries of change. Finally, we will note the most likely long run changes consistent with this analysis, and we will discuss in greater depth a few of the possibilities.

Workers' Criteria

Yankelovich (1974) found that among young people there were few differences in the criteria that they viewed were important aspects of a good job, whether the respondents were blue collar, white collar, or college-trained professionals (p. 104). Table 2 shows those top job criteria reported by a majority of all young working people.

Table 2

Important Job Criteria Indicated by Majority of Young Workers*

(1) Friendly, helpful co-workers (70 percent).

(2) Work that is interesting (70 percent).

(3) Opportunity to use your mind (65 percent).

(4) Work results you can see (62 percent).

(5) Pay that is good (61 percent).

(6) Opportunity to develop skills/abilities (61 percent).

(7) Participation in decisions regarding job (58 percent).

(8) Getting help needed to do the job well (55 percent).

(9) Respect for organization you work for (55 percent).

(10) Recognition for a job well done (54 percent).

*Source: D. Yankelovich 1974: 104.

These criteria are remarkably similar to those set out by industrial psychologists and other specialists who have attempted to consider the most important dimensions for improving the quality of working life.[20] Further empirical support is provided by a study of over 1500 American workers at all occupational levels who were asked to rank in importance some 25 aspects of work. The top eight categories were: (1) interesting work, (2) enough help and equipment to get the job done, (3) enough information to get the job done, (4) enough authority to get the job done, (5) good pay, (6) opportunity to develop special abilities, (7) job security, and (8) seeing the results of one's work (U.S. Dept. of H.E.W. 1973: 13). The overall conclusion seems to be that while issues of pay and mobility are still important, workers in general and young workers in particular are seeking "...to become masters of their immediate environments and to feel that their work and they themselves are important -- the twin ingredients of self-esteem" (Ibid.).

The reforms that are suggested by these criteria are a greater emphasis on virtually all of the categories of workplace reform, but with a specific focus on the micro- and macro-political reforms that will increase the degree of participation and cooperative decision-making that will accomplish many of the goals in Table 2. In the U.S. context, a specific reform that would seem central is that of the autonomous work group with its emphasis on participation, cooperation with fellow workers, responsibility for a relatively large share of the work process and product, and flexibility from one work situation to another. Optimally, workers would wish to have the control implied by some of the macro-political reforms, but it is important to consider additional constraints on the eventual determination of which types of reforms will be adopted.

Management Criteria

In most situations it will not be the workers who initiate work reforms, since it is the owners of capital and their managerial representatives who have the principal legal rights to determine the organization of work in private enterprises and public administrators who have these prerogatives in government agencies. This means that any changes will not only have to improve the situation of workers, but they will also have to be consistent with the criteria of public or private enterprises for initiating modifications of the workplace. Accordingly, it is necessary to set out criteria for modifying the work organization from the view of owners and managers. To return to the original dilemma from their perspective, there appear to be increasing difficulties in integrating the "new" worker into the production structure with increasing threats to productivity. Accordingly, the first criterion from the perspective of such organizations is to maintain or to increase productivity. This means that any modification must show promise of increasing labor productivity including such aspects as innovative behavior; initiation of new techniques that increase productivity; adaptability to changing work procedures; reduction of turnover, absenteeism, lateness, theft, sabotage, work stoppages, and closer identification with the work organization (S. Seashore 1975, p. 110).

While the prospect of increased productivity (or stemming a decline in productivity) is a necessary condition for the adoption of a particular change in the organization of work, it is not a sufficient condition. Productivity is only of interest to a capitalist enterprise if it affects its profitability. Accordingly, such improvements in productivity must also be captured in the form of increased profits. This is the second criterion

that will govern the choice of workplace modification. Some changes will require immediate negotiations with workers and their trade unions who will want increased benefits because of the obvious increases in productivity. Other improvements in productivity will be more subtle, and the firm may be able to expropriate all or a large share of the increased product into increased profits. Thus, while the direct impact of a modification of work organization on productivity is a necessary criterion for change, the indirect effect on profits represents the ultimate criterion.[21]

The final management criterion that will guide the search for strategies for changing the organization of work to improve productivity and profitability is that of control. The control of basic decisions about the use of property or capital in production is vested in the owners of that property as reflected in law. For obvious reasons, the history of work organization has been the development of a variety of managerial devices that tend to consolidate the control of the work organization and its workforce at the top of the organization.[22] While the technical changes in the organization of work do not necessarily require an erosion of this control, many of the political changes do encroach on the traditional prerogatives of management. Others yet may even make some of the middle levels of management redundant as workers make decisions that were usually relegated to those middle echelons.[23] The need of management to maintain control of the work organization may even conflict with alternatives that would provide a higher level of productivity, and this may be one of the reasons for past reluctance to adopt alternative organizational modes.[24]

In summary, there are three criteria that management will use in viewing prospective changes in the organization of work: productivity, profitability, and control. Obviously, the three are closely related in

that higher labor productivity is a general requirement for increasing profitability, and control of the organization is a necessary ingredient for setting out specific reforms for converting increased productivity into profits. Thus, those solutions which are most likely to meet these criteria will be more acceptable from the view of management, and it is obvious that there will not be a complete overlap between the preferences of workers and those of management.

Trade Union Criteria

Before examining the specific types of reforms that are consistent with worker and management preferences, it is important to examine briefly the role of the trade unions and the state.

The trade unions have represented organized labor in the collective bargaining situation. To a large degree the trade unions have reflected a corporate entity that has accepted to a major extent the overall capitalist work relationship while bargaining in behalf of the workers on such issues as salaries and wages, hours of work, employment security, and safety conditions. There are at least two reasons that it is unlikely that the trade unions in the U.S. will take the lead in altering the organization of work.

The first is that the trade unions themselves have tended to lack an interest in highly decentralized and democratic (in the participative democracy sense) solutions to the problems of work organization. The unions tend to be structured as large countervailing powers to the monopoly powers of the big corporations with the emphasis on the same types of strong, centralized bargaining strategies. To a large extent the focus on different situations in the workplace and their diverse solutions is viewed as

diverting energies from the larger struggle with capitalist employers as well as threatening worker solidarity by emphasizing local differences in worker needs. Accordingly, the emphasis on large, centralized trade unions rather than smaller ones dominated by "grass-roots" control tends to preclude a strong orientation towards initiating changes in the workplace (Aronowitz 1973: Chapter 4).

The second reason that trade unions are not likely to take the lead in these types of changes is that historically the alteration of the workplace has almost always represented an effort to reduce labor costs or increase productivity with concomitant threats to employment security. Typically, attempts to alter the workplace have consisted of the replacement of men by machines and the further subdivision of labor. Given this historical pattern, it is not surprising that the unions are suspicious of changes in work roles and that the trade unions represent a rather conservative element in this domain. Some evidence of the degree to which this attitude is held is reflected in the fact that some three-fourths of both union and management officials who were surveyed in 1974 agreed that: "Unions are suspicious of job enrichment, but they will support it once they are confident it isn't a productivity gimmick" (Katzell, Yankelovich, et al. 1975:95).

For these and other reasons, Aronowitz (1973) concludes that:

> The most notable feature of the present situation is that the unions are no longer in a position of leadership in workers' struggles; they are running desperately to catch up to their own membership (215).

In addition, it should be pointed out that only about one-quarter of the labor force belong to unions. Accordingly, though unions will clearly be concerned about changes in the nature of work, they are not likely to be

the prime initiators in most instances. Indeed, over the short run they are more likely to be a rather conservative force especially in those industries where they have a strong bargaining position. But, over the long run they may have to yield to other forces such as grass-root pressures for change (Aronowitz 1973; R. Hyman 1973).

State Criteria

The role of the capitalist state is somewhat more difficult to characterize with respect to changes in the organization of work. On the one hand, the State must protect the rights of private property, which would restrict its role in altering the degree to which capitalist owners and managers determine how their capital will be used. On the other hand, the state has shown a long history in mediating the contradictions of capitalism through the socialization of workers and the sponsoring of laws which govern the capital-labor relation, phenomena that have been reviewed elsewhere.[25] Thus, we would expect the State to intervene only in those cases where the manifestations of the capital-labor contradiction are so severe that there is a serious challenge to the capitalist system itself. Such attempts will be oriented towards making capitalism survive and more efficient.[26]

While there is little recent evidence of direct state intervention in the work relation in the United States, there is a strong presence in Western Europe. In particular, the attempt to obtain widespread worker participation on the boards of firms at both the level of individual countries such as West Germany, Britain, and Holland and in the Common Market itself reflects an attempt to structure the mediation of the conflict in a particular direction, away from the demands of the leftist labor movements for nationalization of industry and worker self-management. Thus,

the emphasis on "co-determination" reflects what Gorz (1968) has called a reformist-reform which would defuse the conflict by accepting the existing structure of capitalism while altering the composition of representatives on the boards. (See A. Gorz, 1968: 78.) Thus, it is no surprise to find that a report that was prepared for the Bullock Committee of Inquiry (Department of Trade, 1977) on Industrial Democracy in the United Kingdom that had examined the European experience with co-determination has concluded: "worker directors have generally had little effect on anything, and secondly and consequently they have certainly had no catastrophic effect on anything or anyone."[27]

Sweden represents an important exception to this generalization where there has been a long history of legislation supporting workers and trade unions (Bernt Schiller 1977). Particularly with the reign of the Social Democrats since the 1930's there has existed a cooperative model between the government, the employers' association (SAF) and the major trade unions (LO) and (TCO). On the one side the government pushed for and achieved numerous work reforms including extensive health and safety regulations, strong employment security through protection from arbitrary dismissal, right to leave of absence for purposes of study, access to accounting information in larger companies for purposes of negotiations, and most recently the rights of the workers to determine employment policies and the organization and distribution of work.[28] On the other side, the government has insuted the profitability of firms through relocation and training subsidies as well as a very active labor market policy.[29] Thus, the Swedish approach represents one of the most complete examples of involvement in the work environment with the goal of avoiding conflict that might disrupt the normal functioning of its economic institutions. While other Scandinavian countries have

adopted some of these measures, none has gone as far as Sweden (Schiller 1977).

In summary, the capitalist state will tend to defend the rights of capital as private property and will not intervene in the organization of work except under conditions of rising and potentially disruptive class conflict. In that case it will attempt to mediate the conflict by first pursuing established areas of state intervention such as education and training patterns, public assistance, or expanding public employment rather than intervening in the organization of work. To the degree that such intervention becomes necessary it is likely to take the form of creating reforms that will tend to reduce the overt conflict while maintaining the basic structures of capitalist control. Thus, the state performs a crucial role in averting the pressures by leftist groups to adopt more radical alternatives. The movements toward government support of co-determination in Western Europe seem to represent an interesting example of this phenomenon. In contrast, the lack of overt class conflict in the United States for most of the past has obviated such government action in contrast with the European case.[30] However, there is increasing evidence of both rising conflict as well as government concern and the possibility of future intervention.[31]

STRATEGIES AND SPECIFIC REFORMS

In the previous section we suggested that different constituencies have different criteria in considering the adoption of work reforms. Workers will tend to emphasize those changes which increase their participation, autonomy, intrinsic interest in the job, and supportive relations with coworkers as well as such traditional benefits as increased pecuniary rewards and fringe benefits. Managers will tend to seek those changes which increase

productivity and profitability without a loss in control. Trade unions and the state will be much more conservative than either of the previous groups in seeking changes from the status quo, each initiating changes only under very stressful conditions. Given these sets of priorities, it is possible to consider the strategies of the major constituencies with respect to reforms.

Management-Initiated Reforms

By virtue of its legal rights and dominance in the ownership of capital, management will be the prime initiator of changes in work for the foreseeable future. This means that the majority of attempts to change work will follow the patterns set out by the needs of managers. The possible categories of reforms for management are those which increase productivity and profitability without an erosion of managerial prerogatives with respect to decision-making. On this basis, it is easy to rule out management-initiated changes that would encompass macro-political reforms, since these would tend to reallocate power from managers and existing capitalist owners to workers or other groups. Thus, such forms of change as the movement to producer cooperatives, nationalization, or complete worker control of the Yugoslavian variety will not be candidates for managerially-initiated changes in work.

At the opposite end of the taxonomy, many of the micro- and macro-technical changes in the workplace will seem very attractive to management, if they are successful in increasing productivity and profitability. By definition, none of these types of reforms require management to relinquish control over their managerial prerogatives. However, there are a number of reasons for believing that these types of changes in themselves will not be adequate to increase productivity over the long run unless they are

accompanied by micro- or macro-political alterations.

First, many of these changes are cosmetic in nature without underlying alterations in the structure of work and decision-making. For example, improvements in management-worker communications and human relations, in themselves, do not avoid tne inevitable problems associated with uninteresting and routinized work with little or no worker influence over working conditions and low possibilities of advancement. Opening up lines of communication can only be successful in increasing productivity over the long run if there are adequate responses to the concerns that are expressed by workers. Yet, many of these concerns reflect problems intrinsic to the existing organization of the workplace and production, and even a sympathetic and humane supervisor or manager will be unable to alter them without a structural mandate for change.

Second, the frustrations of the young and overly-educated worker are due in large measure to the lack of autonomy and low skill requirements of the jobs that will be available. In the past, it was possible to harness the hope of future advancement to supervisory positions as an incentive for working hard at lower-level positions.[32] But, social mobility both within and among firms is certain to decline over time as a period of slower economic growth results in lower rates of expansion at the managerial level. This means that the promise for obtaining promotion to a more autonomous and higher status position in the future by showing good and stable job performance at a lower level will no longer serve as powerful an incentive as it did in the past. The implication is that at the lower levels of the firm, productivity will be maintained by placing an increasing emphasis on participation in the decisions that affect the work situation.[33]

Accordingly, the most likely change appears to be towards such

micro-political reforms as autonomous work groups and representative works councils. The record for improving productivity through these forms of participation is rather substantial.[34] Further, the pressure by workers for upward mobility is somewhat blunted by the vertical integration of tasks that would otherwise be organized hierarchically. That is, the work group will tend to organize its own activities with respect to planning the organization of the work, training the members of the group for the various tasks, executing these tasks, and evaluating the performance of the group. Production bottlenecks which might have occurred by virtue of absences and a lack of coordination are reduced as workers are trained to do many tasks and as they assist each other in the overall mission of the group. In some cases this focus will be on the production of a sub-assembly of a larger product, and in other cases the mission will correspond to the goals of a particular service department such as sales, accounting, or credit.

Clearly, the particular shape of micro-political reforms generally and autonomous work groups specifically will depend on the nature of the enterprise and its setting. That is, the formation and functioning of such groups will necessarily vary according to the type of product or service, the internal organization for producing it, the ability to alter technology and capital to accommodate the new forms of participation and so on. Initially, the changes will be determined by trial and error, although there are a mounting number of successful cases and experiences that have been documented and analyzed that might be used as guidelines.[35] It is probably reasonable to believe that some of the dimensions of these experiences will become established components of managerially-initiated work reforms, with their projected focus on worker participation.[36]

One of the best-known cases is that of the Pet Food Division of

General Foods in Topeka, Kansas, The manufacturing unit in Illinois was characterized in 1968 by problems of employee indifference and sabotage that led to product waste and plant shutdowns.[37] In considering the establishment of a new plant in 1968, it was decided to construct the plant in Topeka, Kansas and to redesign the work process to avoid the problems that were faced in the Illinois plant. The solution encompassed organizing the seventy employees into six autonomous work groups of seven to fourteen members and a team leader.

During each shift a processing and packaging team operates where the former group covers the tasks of unloading and storing materials until they are needed and then drawing them from storage and processing them into pet food. The packaging group is responsible for packing, warehousing, and shipping. Assignments to specific tasks are done with team consensus, and there is substantial job-sharing and rotation, while tasks in the old plant were permanently assigned to specific employees. In addition, the teams screen and select new employees, counsel those who are not meeting standards in terms of performance or attendance or some other relevant factor, select representatives to serve on plant-wide committees, and fulfill other decision-making functions.

The results have been rather dramatic from the view of both the workers and from the view of productivity and profits. A reduction in plant costs attributable to 92 percent fewer quality-rejects and an absentee rate considerably below the industry norm have generated an annual saving of $600,000. (R. Walton 1976: 238.) While from the perspective of the existing employees and management, the plant is an overwhelming success, it should be pointed out that from the perspective of the trade union movement it tends to reinforce suspicions about innovation. First, the Topeka plant is a

non-unionized plant that replaced a unionized one, and, second, the plant is able to produce with 70 workers what was estimated to require 110 workers according to industrial engineers, an important source of the cost savings. (R. Walton 1976: 238.)

While the conflict between structural changes in the organization of work and employment security are inherent as we will note below, this does not mean that such changes cannot be made in conjunction with trade unions and with employment security safeguarded to some extent. However, obviously this will not be an important criterion for management in its quest to improve productivity and profitability, and it was emphasized that most work alterations will be management-initiated. In at least one case in the U.S. the use of work teams and increased worker participation in decision-making has been initiated cooperatively by management and union. The management of the automobile mirror plant of Harmon International in Bolivar, Tennessee in conjunction with the United Auto Workers agreed to such work reforms as increased worker decision-making over issues of job design, tools to be used, and the organization of work. Like other micro-political reforms, there was no increase in worker participation in such areas as product choice, marketing, investment, or disposition of profits. While physical productivity rose about 17 percent between 1972-75, the economic recession of 1975 still had an impact of reducing remporarily, plant employment from about 900 workers to 600.[38]

One approach that has been adopted by several dozen companies is the Scanlon Plan.[39] The basic elements of the plan include: (1) teamwork with active employee participation; (2) a formal system for channeling employee recommendations for change to a production committee, and (3) a bonus system which shares the results of productivity gains with the workers. According to systematic studies of one of the companies that adopted the Scanlon Plan,

there were substantial reductions in the costs of production, rises in quality, improvement in employee satisfaction, and the distribution of ample bonuses. (H. M. F. Rush, 1973: 49.)

A review of the Scanlon Plan by the National Commission on Productivity examined some 22 studies on 44 of the firms. (National Commission on Productivity and Work Quality 1975). Based upon the criterion of increased productivity, it was concluded that apparent successes outnumber apparent failures by 30 to 14. The plan seemed to be more likely to fail in larger firms and those with "insurmountable" economic difficulties.

A final example of micro-political change in the workplace is the well-known case of the Volvo plant in Kalmar, Sweden. (P. Gyllenhammar 1977.) In responding to the problems of high worker absenteeism, wildcat strikes, turnover, and product quality control, Volvo decided to construct a new plant for some 500-600 workers in Kalmar in contrast with its older automobile assembly plant with 8,000 workers in Torslanda, near Gothenburg. The plant was built around the concept of about twenty-five work groups, each with its own area on the shop floor and its own rest area. Each team attends to a particular aspect of automobile assembly such as electrical systems, instrumentation, interiors, and so on, and the organization of the team is up to its own members with respect to the distribution of work, degree of specialization, and so on. The teams must deliver a certain number of sub-assemblies each day, but the scheduling of work, rest breaks, training, and other activities are determined by the groups. Each team takes responsibility for its work by conducting its own inspections for quality control.

On the basis of an evaluation sponsored by the Swedish Productivity Council (a jointly sponsored body of the blue-collar trade union, LO, and the employers' federation, SAF) the findings were rather supportive with

respect to worker acceptance and satisfaction, worker participation, reductions in personnel turnover and absenteeism, and productivity. The view is that the increased investment with respect to the special requirements of the plant will be more than compensated for by the long run reduction in costs. Indeed, Volvo now has five new plants that are restructured along this new model with total employment of 600 or less organized into work teams.

In summary, it appears likely that management-initiated changes in the organization of work will stabilize on micro-political reforms of which autonomous work groups and work councils and extensive worker participation will be at the core. In order to establish these modifications, it will be necessary to alter some of the technical aspects of the work environment, but micro- and macro-technical changes in themselves are unlikely to solve the productivity problems deriving from the dissatisfaction of an increasingly overeducated and underfulfilled work force.

Worker-Initiated Changes

Although worker-initiated changes in the organization of the workplace are less likely than management-initiated ones because of the lack of worker ownership of capital in their own firms, there are some circumstances under which such changes are probable. To illustrate the relative lack of ownership of the working class, it is estimated by the staff of the Joint Economic Committee of the Congress that the wealthiest twenty percent of U.S. families own almost 80 percent of total personal wealth and that the wealthiest six percent of the population own almost three-quarters of the corporate stock and almost eighty percent of bonds. (Joint Economic Committee 1976: 7.) This suggests that workers will rarely have the power to create significant changes in their work organizations.

However, there are at least two sets of circumstances in which workers might acquire the capital that will enable them to determine the organization of work in their enterprises. In the first case, workers might start their own firms by raising the capital themselves, and in the second one, they might purchase the firm through an Employee Stock Option Plan (ESOP) or other financial means.[40] In these cases, the control of the work organization would be characterized by macro-political controls by the workers of which the most common would be likely to be some variant of a producer cooperative.

Producer cooperatives are characterized by worker ownership and worker management through direct or representative participation in all phases of the enterprise. While there has been a long history of producer cooperatives in the U.S. and Western Europe, they have not been a very important element in the total picture (D. Jones 1977 and A. Shirom 1972). However, they represent a potentially important response to both the lack of appropriate jobs and high unemployment levels that have been projected for the future.

In the first case, the producer cooperative represents a mode of enterprise that can be started by a group of unemployed or underemployed persons with a shared mission and at least some access to capital. That is, such persons can create their own employment, a phenomenon that is being reflected increasingly in the small service-oriented cooperative establishments in most metropolitan areas. In the second case, they represent a method of converting firms that might otherwise close to worker ownership through either ESOP or other plans of employee purchase. For example, at the Meriden Triumph Motorcycle Works in England, some 800 jobs were saved through the conversion of a plant that was being closed to worker ownership (Carnoy and Levin 1976a).

It is probable that governments will become increasingly willing to provide loans and technical assistance to help workers save their jobs through the employee purchase of firms that are closing and the conversion of such firms to cooperatives. The reasons for such government support are not only the maintenance and creation of jobs under conditions of high unemployment, but the fact that available evidence suggests that productivity of cooperatives is high and the capital required for each job that is created is low.

For example, in the Basque region of northern Spain there is an entire movement of industrial cooperatives with sales in 1974 of about $350 million. (Oakeshoot 1975; Caja Laboral Popular 1975.) These firms produce products as diverse as home appliances, selenium rectifiers, semi-conductors, miniaturized circuits, and hydraulic presses, and they include the largest refrigerator manufacturer in Spain. Total employment was over 13,000 workers in 1974, and comparisons with non-cooperative firms suggest that with only one-fourth of the capital investment per worker they are able to obtain an output per worker (value-added) of over eighty percent of that of comparable firms. (Caja Laboral Popular 1974.) While the U.S. has no producer cooperative movement that is comparable in magnitude, there do exist similar types of industrial organizations such as those of the Northwest Plywood Cooperatives. (Paul Bernstein 1976.)

In summary, the lack of worker ownership and control suggests that worker-initiated changes in the organization of work are not as likely to arise as management-initiated changes. However, the possible employment generating aspects of worker-owned firms is likely to make them an increasingly attractive possibility from the view of government, particularly if conversion to worker ownership can salvage firms in high unemployment areas,

that might otherwise close. Accordingly, various macro-political forms of work organization, in general, and the formation of producer cooperatives, in particular, will become more important over time.

A Note on the Role of the Trade Unions

The foregoing analysis illustrates an important dilemma for the trade unions. If workers behave in a way that they are able to take into their own hands the ability to modify their conditions of work through the costly pressures of absenteeism, turnover, sabotage, and wildcat strikes, then management will be pressed to provide changes in the workplace that alleviate these problems. But, such modifications may undermine organized labor in a number of ways. First, to the degree that employed workers in any firm seek benefits only for themselves, they may settle for solutions that harm worker solidarity and gains for all workers in the long run. For example, they may accept workplace alterations that increase productivity while reducing the number of future jobs.

Second, by viewing the world as a set of decentralized work situations, the centralized bargaining strength of the trade unions is undermined as firms will find that it is easier to come to agreements with particular groups of workers, and groups of workers may become frustrated with the relatively high degree of uniformity and abstraction of centralized agreements. This is especially true if the autonomous work groups approach creates a set of dynamics in which groups see themselves competing against each other for benefits and power within the firm, while the trade unions push for uniformity of benefits and job conditions across hierarchies of workers among different firms and industries.

Most of the changes that we have referred to will occur on a highly

decentralized basis, and most will incorporate a reduction of hierarchy. In contrast with corporate and hierarchical unions which emphasize a high level of centralized worker solidarity, the appeal of national and industry-wide trade unions may diminish. That is, workers and managers may see the relevant arena of conflict as a local one in which national or industry-wide agreements are unappealing or irrelevant. To the degree that managers are able to increasingly exploit this situation by shifting production activities to areas with weak unions or no unions and undermining the formation of unions through emphasis on work teams and autonomous groups, the position of the trade unions will become increasingly precarious. Certainly, the illustration of the pet food plant in Topeka, Kansas suggests this possibility.

Changes in Work in the Longer Run

While the analysis that we set out in this chapter represents an emerging phase of the dialectic of the workplace, it is not meant to represent a final stage or resting place. As long as the fundamental antagonism or contradiction of capitalism persists, it is to be expected that even these modifications will create the conditions of their own disintegration. (S. Avineri 1971: Chapter 6.) Thus, the question arises as to what happens in the labor process as persons work together to make decisions jointly about their work activities and working life? Does this lead to a higher level of class consciousness that will ultimately challenge the roots of the system of capitalist control itself? To what degree do persons who become acclimated to making scheduling, training, evaluation, and other types of decisions in the workplace begin to raise questions about employment, the types of equipment and investment, products, prices, and other aspects of the firm? How will such changes affect the strength and role of the trade unions?

VI. EDUCATIONAL REFORMS FOR WORKPLACE DEMOCRACY

The preceding section addressed the nature of workplace alterations that are likely to evolve to overcome the increasing difficulties in integrating the "new" overeducated worker. Not only has the educational system become increasingly unsuccessful in preparing the young for existing work opportunities, but the independent dynamic of the schools has served to create a workforce that will tend to increase disruption and conflict in the workplace. Our dialectical approach has suggested that the divergence between the dynamics of the workplace and that of the schools will create a disintegration of the old relationships and an emergence of a new synthesis between the two sets of institutions. This means that not only will there be changes in the workplace, but there will be alterations in the patterns by which the young will be prepared for work as well. That is, a stable pattern of correspondence will be reestablished through alterations of both the workplace and the educational system, so that a new and relatively stable pattern of mutual reinforcement will emerge. Of course, even this new pattern of correspondence will ultimately decay because of the underlying antagonisms in both institutions, only to give way to new forms of work and education.

Which Educational Reforms are Most Likely

The purpose of this section is to ascertain the types of educational reforms that will be stimulated by the projected changes in the workplace that were set out in the previous section. It will be asserted that the structure and content of changes in the workplace enable a prediction of the kinds of educational reforms that will ultimately be adopted. It is important to differentiate between the immediate responses to the problem and the ultimate results. The fact that a reform is attempted does not

mean that it will succeed. The history of "planned" change in education is replete with failure, if the measure of success is that the planned change was implemented according to design (Carnoy and Levin 1976; Berman and McLaughlin 1975). Such failure is especially likely when reforms are viewed as changes that are recommended and implemented by outside experts according to a technical recipe.

Like workplace reforms, educational reforms will be attempted as responses to particular problems in the educational setting. Problems for one political constituency may not be problems for another, and change is essentially an attempt to reduce conflicts among contending groups. Through trial and error and strategy and counter-strategy a new equilibrium is reached that balances the interests of all of the contending parties in rough proportion to their strengths, their abilities to forge coalitions with other groups, and their success at winning over the support of "non-combatants" who may influence the process. It is within this context that work-oriented reforms should be perceived. For the mere attempt by one group such as educational professionals or businessmen or educational administrators or parents to push for changes in the educational system does not mean that such changes will succeed.

Educational Reforms for the Present Education-Work Crisis

The fact that the success of educational reforms cannot necessarily be predicted from the present trend of reform efforts is very much evident in three existing attempts to address the deviation of the education and work systems. These three reforms are career education, recurrent education, and the "back to basics" movement. All three of these are movements that are products of the seventies with its severe shortages of appropriate jobs for young, educated persons. The lack of employment opportunities for both

high school and college-educated youth has created pressures on the school to reconsider and improve career preparation. The expectations for career success through education have been confronted by the hard fact that good jobs are in very short supply. Paradoxically, despite the very high rates of youth unemployment and underemployment, many students, young adults and their families and social commentators have placed the blame for the lack of appropriate employment opportunities on the "failure" of the educational system to provide adequate skill and attitude development among youth that would justify employability. Let us review each of these current reforms, in turn.

Career Education

The most pervasive response to the difficulties of finding employment for the young has been the attempt to initiate "career education." While this movement is ambiguous enough to provide a large number of amorphous goals including appropriate preparation for the career of life itself, it has generally taken the form of a concerted effort to articulate and integrate more closely the worlds of schooling and work.[41] The vehicles for doing this include attempts to improve career guidance on the nature and attributes of existing job positions; to increase the career content of curricula; to intersperse periods of work and schooling as part of the regular educational cycle; and to provide a more "realistic" understanding of the nature of work and available opportunities as well as inculcating in the young the "dignity" of all work.

Each of these palliatives is addressed to attempting to reduce the divergence between the school and the workplace, with the assumption that it is the school that must make the accommodation. Tacitly it is assumed

that the workplace will not change nor will available employment opportunities, but it is the values, attitudes, expectations, choices, and skills of the young that must adapt to the deteriorating situation of disjuncture between the world of schooling and the world of work. Through better counseling and career guidance, the students will learn more about themselves and their potential opportunities. Curricula will be modified to make them more appropriate to existing jobs, so that students are better prepared for the types of employment that they are likely to find.

Further, students would be provided with opportunities to become more familiar with the workplace at an earlier age by providing opportunities to combine schooling with work. In some cases the student would alternate between study and work as part of a daily, weekly, or other periodic pattern. In other cases, students would be provided with exposure to various types of jobs and workplaces through field trips, readings, films, and other classroom activities. Work-study programs have existed for a considerable time for students in vocational areas at the secondary level and for those attending such U.S. colleges as Antioch, Northeastern University, and other colleges that have sponsored cooperative educational programs. (A. Knowles 1972.) However, it is proposed that such offerings be expanded to include virtually all youngsters at the secondary level to ease their transition from school to work. (J. Coleman et al., 1974. National Manpower Institute 1977.)

Finally, while some curriculum change would provide more vocational types of courses such as typing and accounting for students who were pursuing liberal studies, there is also a more pervasive aspect of career education that would attempt to reestablish the work ethic and the values that even the lowest status job has dignity. How this would be accomplished is never

made clear, but the literature on career education encourages the formation of these values via the schooling process.

But, there is little or no evidence that career education is making young persons more realistic or accepting of the available career opportunities or that they will be more productive in those opportunities. It is interesting to note the evidence in Table 1 that a national sample of high school graduates in 1972 were not found to be more "realistic" about careers as reflected by their career aspirations, even after being out of high school for two years and a majority having participated in the workplace. The point is that the expectations for social and occupational mobility through the educational system is a major reason that students obtain as much schooling as they do, and it seems ironical that the educational system should now be proposed as a vehicle for reducing the expectations of the young for high job status and pay, and good working conditions. In fact, the career education approach must inevitably fail as long as there are not accommodations in the workplace that provide other incentives for students to modify their expectations and behavior.

The important point is that knowledge of available jobs does not alter the somber fact that good jobs will be in short supply for the foreseeable future and that most young people will be disappointed with their work status. Nor does an exposure to available jobs create the impression that work is creative, useful and characterized by dignity. In fact, an earlier familiarity with the world of work and its highly routinized tasks, endless repetition, and supervisory control may have the effect of doing just the opposite of what was intended.[42] To the degree that the schools and other influences provide an image of the workplace as providing self-fulfillment, opportunities for advancement, and constructive activity, these romantic

notions may be dashed at an earlier age than at present to be replaced by cynicism and hopelessness with all of its destructive consequences.

Recurrent Education

While recurrent education seems to be more a theoretical approach than one that is evident in practice, it too is a work-oriented reform that is being advocated. Recurrent education refers to the attempt to increase the distribution of learning opportunities over the entire lifespan rather than to concentrate them at the beginning of the life-cycle. In contrast to the present approach that requires substantial formal education and training prior to the initiation of a career, recurrent approaches would make it possible to spread out one's educational experiences according to emerging needs at different times of one's working life (S. Mushkin 1974).

Interestingly, the support for recurrent education tends to be contradictory when one compares the implicitly divergent motives of educational institutions and social policy makers. One important effect of recurrent education would be to reduce the demand for the traditional educational credentials as persons would redistribute their educational experiences over their lifetimes and would substitute more training experiences for traditional college study. By increasing the opportunities for later study, it is expected that the presently high social demand for college credentials by young people would drop, alleviating pressure on job markets by college-educated persons. Instead, such persons would seek jobs at lower levels and would undertake training and further education later in response to personal and job needs. Clearly, this would tend to reduce some of the consequences of "overeducation."

But one of the reasons that the education industry is so supportive

of the recurrent education concept is because it sees the hope of capturing a new clientele at a time when enrollments are threatened by a declining population of young persons of the traditional college ages. Obviously, there is some conflict here, since one effect of recurrent education would be to postpone college attendance for a significant portion of the young. Whether those persons would be recouped at some later date is problematical, but it does not seem likely that they will undertake college at a later date if they are able to find career opportunities that satisfy them with little need for more education. While new audiences might be obtained for the educational institutions by creating greater flexibility with respect to age and admissions requirements, it is not clear that these new enrollees would compensate for those who "postponed" their further education to take advantage of later recurrent opportunities.

But, even more important, without changes in the nature and availability of jobs, the recurrent educational approach must necessarily have a minimal effect on reducing immediate enrollments of the young in colleges and universities. First, the very lack of jobs will create an incentive to obtain more schooling, since the "foregone" opportunities will be minimal. Without the temptation of good jobs, it is simply a better decision to get more schooling to improve one's chances for the future. Second, the structure of job markets tends to limit career mobility to a largely non-overlapping set of career ladders. Without a college certificate, it will be difficult to get access to the occupational positions that require more training. Rather, the highly routinized nature of lower-level manufacturing, clerical, and service positions requires no additional training, nor does it offer a route to a different occupational ladder with greater educational or training requirements. Job incumbents will find that their potential occupational

mobility will depend more on entering the firm at the highest possible entry level which provides access to better career opportunities, than working their ways up from the bottom through the vehicle of recurrent education. The janitor or stock clerk will have little likelihood of getting into management, even with recurrent educational accomplishments, while the college-educated youth who is able to attain a higher position will have a much greater probability of moving into middle or upper management.

Thus, like the case of career education, the very premises of recurrent education are ones that are not likely to be met under the existing conditions and organization of the workplace. Even when educational sabbaticals have been provided by firms as part of a collective bargaining agreement, they have not been taken advantage of except by those who were already among the most highly educated and those occupying the higher occupational positions (von Moltke and Schneevoigt 1977).

Back-to-Basics

Finally, a movement that seems to be a response to the present crisis is that of the "back-to-basics" trend. In apparent reaction to both the somber job picture and the putative decline in student skills, many educators and parents are calling for more structured schools that would place greater emphasis on discipline and basic skills. While there is little research on the extent of the movement, it does appear to be on the upswing.[43] But, if the decline of school discipline and student achievement is in large measure due to the declining exchange or commodity value of these attributes in the workplace, then such an attempt to improve the career possibilities of youth through a back-to-basics approach may not make any difference. That is, if the main determinant of proficiencies in such skill areas as reading, writing, and arithmetic are determined by the rewards in the marketplace for those

skills, then the depressed condition of the job market provides little incentive for putting energies into doing well in these areas by students.

When the job market was more buoyant and good jobs and admissions at the best colleges were available only to students who showed evidence of such skills, there was a strong incentive for students and teachers to take seriously these subjects. Grading practices were more severe; students took more of the traditional courses in high school and college; college entrance examinations were prepared for by taking the tests several times and by obtaining instruction on how to take the tests and so on. But, when it is obvious that for the vast majority of young people, entrance to a good college is no longer highly competitive and that few good job opportunities are available for college graduates anyway, only a small coterie of highly dedicated students such as pre-medical ones will focus on such skills.[44] Again, the argument is that there is a connection between the success of educational reforms that attempt to reduce the increasing divergencies between schools, the workplace, and supportive changes in the workplace itself. Without supportive changes, the schools cannot single-handedly create reforms that will succeed in reestablishing correspondence between the two sets of institutions.

Conditions for Successful Educational Reforms

What conditions are necessary for educational reforms to succeed in bridging the increasing gap between the socialization effects of schools and the needs of work organizations? In previous sections we reviewed some of the forces leading to the establishment of correspondence. For example, the history of socialization for work was dominated by the shift from the household to the school and the emergence of the school in a shape that conformed

to the changing organizational requirements of capitalist work. Likewise, in the empirical analysis of the differential socialization of children for work, it appeared that there was a very close correspondence between the everyday realities faced by parents and the ways in which the schools treated their children. While the forces that create a reestablishment of correspondence are complex, they might be summarized in the following way.

Changes in the organization and content of education are determined to a major extent by supportive changes in the workplace. Not only does the historical analysis reinforce this conclusion, but so does the analysis of why so many educational reforms have failed when there is no corresponding modification of the organization and content of the production process. (Carnoy and Levin 1976.) Mechanical attempts to alter the functions of schools without supportive modifications of the workplace do not provide incentives for the groups involved in the schooling process to modify their behavior. As we noted in an earlier section, a major reason that administrators were willing to adapt schools to the requirements of business organization at the end of the nineteenth and beginning of the twentieth centuries was that the new organizational methods had appeared to provide the basis for economic expansion, progress, and prestige that had enabled the U.S. to become a world power (Callahan 1962). Likewise, students and their families were more likely to seek schooling willingly and without compulsion as they saw the increasing importance of formal schooling credentials in obtaining jobs in the expanding industrial sector and in obtaining social mobility.

More to the point, basic changes in schooling follow changes in the workplace because it has largely been the workplace that has created the basic perspectives which influence our perceptions about other organizations

and our own life decisions. For example, we noted that when the workplace lacks opportunities for advancement, students and teachers will take their schooling tasks less seriously and test scores will fall. That is, attainment of the traditional objectives no longer ensure success or justify the efforts when their value declines in the labor market. But, alternatively as the organization of work changes in other directions and sets out new incentives for workers, there exist supportive conditions for change in educational institutions. First, such changes in the workplace will create an image of progress that will be transmitted to the schools through both official and unofficial channels. Schools that adapt quickly to the new requirements will have greater success in placing their graduates than those that do not.

Second, employees in occupations that will be affected by changes will tend to embody them in their childrearing practices and in their expectations for the schools. That parents transmit to their own children the values that create success in their own occupations is reflected in studies of occupational socialization (M. Kohn 1969). Further, as changes in the nature of work become obvious to students and teachers, they, too, have a shared incentive to modify their behavior. Through both formal and informal means, basic changes in the structure and content of work tend to alter the consciousness of workers and managers. Moreover, as citizens, voters, parents, and businessmen change, the new attitudes are transmitted to students, teachers, administrators, school boards, and legislatures. Essentially, the schools become engulfed in a new social reality which creates powerful incentives and pressures for altering their functions to conform with the changes in the workplace.

Specific Educational Reforms

Given this process of educational change, the stage is set for suggesting particular educational reforms that are likely to succeed in the future. Essentially, the successful educational reforms will be those that correspond to the alterations of the workplace and the attendant requirements for work socialization. In the previous section we suggested that the most likely reforms in work are those of a micro-political nature, altering the internal governance of work organizations. In general, these would increase the participation of workers in determining the nature, supervision, allocation and scheduling of work tasks as well as training.

The emphasis on increased worker participation generally and autonomous work groups or teams specifically would suggest a number of new worker attributes that are not a high priority of the present schooling process. First, workers would need to have greater abilities to function in groups, since the work team would need to operate as a mini-democracy where many decisions would be made by consensus. Members of the group would require a background in participating in a collective decision process. Second, workers would need to have the ability to make individual decisions to a greater extent than under the present system where each job and its decision-potential are highly circumscribed by the division of labor. Under a participatory or team approach there would be much more room for personal judgment that would affect productivity. Thus workers would need to increase their decision-making and problem-solving capacities at both the individual and group levels.

Since the members of the work group would share and rotate tasks, each member would need to have the capacity to develop expertise in a variety of work roles. This requirement implies that the members of the group could be

assumed to have minimal competencies in all of the basic skills that underlie these different roles. That is, a common base of knowledge would be presumed in order for team members to learn the various functions of the work group. Fourth, workers would need to have the capacity to train each other for these various work roles, since a significant amount of training would take place among members of each work team. And, finally, the ability to cooperate with others would be crucial since the success of the team would be highly dependent upon the proficiencies of the group in sharing ideas, work tasks, training, and so on.

Accordingly, there would be at least five dimensions that would require major organizational changes in the educational system to prepare workers for greater worker participation and a group or team mode of work organization: (1) ability to participate in group decisions; (2) capacity for increased individual decision-making; (3) minimal competencies in basic skills; (4) capacity to receive and give training to colleagues; and (5) cooperative skills. Even at the present time there exist various educational reforms that could attend to each of these dimensions of socialization, and through new efforts in these directions it is certain that others would arise.

Table 3 presents some of the educational reforms that we would expect to be induced by a widespread shift to worker participation and autonomous work groups or teams. Although each dimension of change in worker socialization is associated in the table with specific educational reforms, the reforms will overlap substantially with each other in the educational context. That is, we would expect a new organizational shape that incorporated these and similar changes.

Table 3

Projected Educational Reforms

Induced by Shift to Worker Participation and

Autonomous Work Groups or Teams

	Dimension of Change	Educational Reform
I	Group decision-making	-- greater democracy in school organization
		-- emphasis on group projects and teamwork
		-- greater degree of integration by race, ability, and social class
		-- team teaching
		-- group dynamics
II	Individual decision-making	-- greater emphasis on problem solving in curriculum
III	Minimal competencies for all	-- mastery learning
		-- criterion-based tests
IV	Collegial training	-- peer teaching
V	Cooperative skills	-- cooperative problem solving

Group Decision-Making

One of the central differences between the present organization of work and that of autonomous work groups is the emphasis on group decision-making for the latter. Members of the group must be able to resolve a large number of issues with respect to the planning, execution, and evaluation of the functions of the group as well as to train, select, and counsel members of the group with respect to satisfying group productivity. In order to prepare persons for these roles, the educational system would need to provide a set of experiences that inculcate the abilities to function as a group.

There are several educational reforms that correspond with this dimension of change. First, micro-political reforms of educational institutions would increase the amount of participation in educational decisions of students and trainees.[45] That is, schools would be characterized by participative democracies to a much greater extent than they are at present with respect to decisions on hiring, curriculum, resource allocation, and resolution of conflict. While the exact forms of participative democracy cannot be predicted because of the many alternatives that might emerge, it is possible that students, teachers, administrators, and parents might choose representatives to comprise a governing board for the school. In large institutions and colleges, such political representation might take place at departmental and other decentralized levels as well as at the governing board locus. The agendas for such meetings would be widely circulated, and the forum would be open to members of the various constituencies. On a daily basis, minor conflicts might be resolved directly among the various persons, and an ombudsman or grievance procedure could be used to solve differences that are not resolvable through less formal channels.

A second alteration would be an emphasis on group projects and teamwork

on student assignments and school activities. Instead of the present focus on individual responsibility for assignments and individual competition among students for grades and other rewards, there would be a shift to students working in groups with the reward for performance conferred on the group. Not only would this type of approach be applied to athletic activities as under the present system, but it would pervade other instructional and extra-mural activities as well. In some cases the teams would be comprised of persons drawn from a number of grade levels, and in other cases the teachers and other personnel would participate as members of joint teacher-student groups. Students would learn to see their relations to the success of the group rather than in a narrower and egotistical way as at present.

Third, the fact that work teams would be composed of persons drawn from a wide variety of backgrounds and facing a wide variety of tasks would require a much greater integration of schools and classrooms by social class, race, and ability. Under the present hierarchical forms of production there is a need to provide a stratified workforce that is differentiated by occupational position, and the schools seem to be organized to reproduce this occupational structure by preparing the young for the occupational levels of their parents as we stated earlier.[46] But the reduction in hierarchy and individual competition in the workplace and the emphasis on teams will mean that workers must be prepared to a greater extent to share similar experiences regardless of their backgrounds.

Fourth, the emphasis on group decision making will be much more supportive of team teaching than is the present system. Cooperation among teaching and administrative personnel as well as students will be an important organizational component in the schools when the objective is to prepare the young for functioning as members of groups. Finally, it will be necessary

to provide some training in group dynamics in the schools. Without resorting to a grievance mechanism, conflicts can be resolved through sharing certain values about the function of the group and learning to participate in the group in a constructive way. This means that students must share positive experiences in balancing their individual needs with those of the group. Various approaches to group dynamics will contribute to this end as well as the team orientation of the curriculum.

Individual Decision-making

Not only does the present approach to work require less group interaction, but it also requires less individual decision-making because the character of many jobs is invariant with respect to the personal attributes of the job holder. Under a more participative form of work organization, individuals will have a much wider scope for decision-making with respect to how they allocate their time and efforts. Accordingly, there are likely to be changes in the curriculum that increase the emphasis on problem solving rather than memorization and routinization of learning. While the latter functions are important for routinized and repetitive job tasks, it is the former that is necessary as the scope of the worker becomes relatively more independent. Not only will such problem solving approaches become important in courses that emphasize skills of communication, computation, and manual activities, but they will also be necessary in the political domain where the individual must be able to utilize information to make personal decisions that will enable him or her to participate productively at the group level.

Minimal Competencies for All

Existing methods of work organization require a large differentiation in skills possessed by workers. But, autonomous groups and other participative

approaches to work necessitate a great deal of job sharing and rotation and the filling-in for absent workers by colleagues. In order for this to be possible and for workers to be trainable for a wide variety of responsibilities, there are probably minimal competencies in both academic subjects and in problem solving and other relevant techniques that must be achieved by all students in preparation for entry into a team approach. One of the educational bases for achieving these results is mastery learning where the objective of the curriculum is to provide minimum competencies in important domains for all students (B. Bloom 1976 and J. Block 1971). In addition to the use of a curriculum approach based upon the mastery learning paradigm, we would expect to see a much wider use of criterion-based tests.

At the present time the educational system relies heavily upon normative tests which are designed to assess how a student performs relative to others. That is, they are essentially useful only to rank students among their peers, not to assess what a student knows. In contrast, criterion-based tests set out the criteria of performance that are considered to be important and test to see how well students perform, given those criteria. Since the criteria can be based upon specific tasks that a competent person should be expected to achieve, it is possible to evaluate how competent an individual is in a given domain. It would seem that criterion-based tests are much more easily adapted to the needs of establishing minimal competencies for all youth than are the traditional normatively-based tests that are only designed to rank students without revealing what they know or are able to do on a particular task.

Collegial Training

To a large degree the shift to work teams and autonomous work groups

will be accompanied by an increase in on-the-job training for the members and by the members. That is, many of the requirements of the work team will be taught within the team by member colleagues. In contrast, the educational and training structures that prevail at the present are organized more along hierarchical and specialized lines where experts and professional educators train students or trainees who are subordinates. The ability to train and be trained by colleagues is a proficiency that can be inculcated through making peer teaching a regular process at elementary-secondary and post-secondary levels (Melaragno and Newmark 1971). By teaching fellow students at the same grade level or at lower grade levels, a cooperative approach to job training would seem to be a natural extension.

Cooperative Skills

In addition to all of the dimensions of change required for socializing persons to work in groups, one must add a set of general cooperative skills. Many of the problems that will be faced by the work group will not only require the abilities to make group decisions, but to cooperate in seeking solutions to problems or exploring alternatives. There are a variety of educational approaches to inculcating cooperative behavior that might be considered in setting out instructional programs. (Johnson and Johnson 1974.) These methods might be developed and applied more fully in the design and implementation of instruction.

Other Trends

In addition to the particular dimensions and their associated educational reforms that would be likely to emerge under more participative work reforms, there are two general changes that appear to be important. Although recurrent education is not likely to be adopted widely at the present for the

reasons that were discussed in a previous section, it is likely that the concepts of recurrent education would become much more implementable under a system of worker participation. The reasons for this are that the increased flexibility of work roles and the tendency towards horizontal mobility implied by the flattening of the job hierarchy will emphasize career progress in terms of service on different teams over the life-cycle. While a substantial amount of training can probably take place on the job itself through peer teaching, some job changes may require additional formal education and training in the classroom. Accordingly, the recurrent education approach will become more functional, and the use of "educational sabbaticals" will probably become more common as employers provide continuation of salary and other benefits while workers retool their skills or learn new ones (von Moltke and Schneeivoigt 1977). Educational entitlements might also be provided by the government for such purposes (Norman Kurland (ed.) 1977).

Finally, there will probably be a shift in the aggregate from formal programs in educational institutions to formal and informal training on the job. That is, to a large degree the kinds of competencies that will be needed to work in groups, to cooperate, to rotate tasks, to adapt to new techniques, and so on, will be ones that can be attained more readily on the job than in an educational context that is removed from the workplace. Accordingly, it seems reasonable that there will be some substitution over the long run of training on the job in place of formal education. The extent of this shift is difficult to predict.

SUMMARY

In this section we attempted to show the types of educational reforms that will arise in response to the anticipated changes in the nature of work.

New patterns of work organization imply changes in the socialization of workers, and educational reforms represent a major response for creating the new set of worker characteristics. The predicted shift from the present work organization to more participative forms generally and to autonomous work groups and teams specifically suggests particular changes in worker proficiencies and behaviors. The corresponding set of educational reforms that would accommodate these changes was suggested.

In general we have argued that educational reforms will become probable when the paths of the educational sector and the work sector diverge with respect to the reproduction of labor power for capitalist and government enterprise. As long as the transition from education to work is a smooth one, attempts at educational reform will not be likely to succeed, particularly if they challenge the stable equilibrium between the two sets of institutions. But as divergencies arise between the paths and needs of the education and work sectors, conflicts will arise that will threaten the stability of both schools and the workplace. Reforms in both arenas will forge a new synthesis of corresponding relationships which will tend to deteriorate anew over time to stimulate a new age of reforms. In the final section of this volume, we will review this dialectical functioning and suggest some of its implications for educational planning.

VII. CONSEQUENCES FOR EDUCATIONAL PLANNING

The purpose of this monograph was to set out the nature of changes in the workplace that will be initiated by a movement toward greater democracy and worker participation in the work enterprise and to trace its implications for the educational system and educational planning. In order to address these phenomena, it was necessary to provide an analysis of the relationship between education and work. The two traditional views provided by the social growth perspective of Dewey and the social efficiency one of the functionalists were shown to be inadequate for understanding the dynamics of change in work and education. Accordingly, a dialectical explanation was given that provided a basis for both stability and change in terms of correspondence and contradiction both within and between the structures of education and work.

In the initial phases of industrial development the schools emerged to socialize workers for capitalist enterprise, and they streamlined their operations and expanded to meet the changing requirements of monopoly capitalism and state bureaucracy. But, in recent years they have diverged somewhat in fuction as they have increasingly obeyed their own independent dynamics. The result has been that the dynamics of the schools and of the workplace have diverged to such an extent that the expansion of production and the reproduction of labor power for both capitalist and state enterprise have become increasingly arduous. Rather than mediating the internal contradictions of the workplace, the effect of the educational system has been to increase conflict and the manifestations of those contradictions.

Increasingly we will observe an extensive period of both work and educational reforms to pull the educational system back once again into correspondence with the system of production. But, the reforms will derive

from the dynamics of the dialectic of correspondence and contradiction rather than from a purposive act of educational planning and reform. This is not to say that there is not a role for the educational planner and reformer, but it is important to understand the very different nature of that role under a dialectical reality. This difference in orientation becomes clear when one considers the nature of a dialectical view of organizations and contrasts it with the assumptions that underlie the planning view.

> A dialectical view is fundamentally committed to the concept of process. The social world is in a continuous state of becoming -- social arrangements which seem fixed and permanent are temporary, arbitrary patterns, and any observed social pattern is regarded as one among many possibilities. Theoretical attention is focused upon the transformation through which one set of arrangements gives way to another. Dialectical analysis involves a search for fundamental principles which account for the emergence and dissolution of specific social orders (Benson 1977:3).

In our presentation we emphasized the forces for both stability and change that have dominated the education and work relationship. But, these are very much at variance with the fundamental premises and approach of the planner. In order to demonstrate these differences, it is important to emphasize certain elements of what might be called the ideology of the educational planner.

Educational Planning as Ideology

There are at least three underlying assumptions to the ideology of educational planning. The first is that a major purpose of the educational system is to solve such problems as poverty, oppression, and uneven political and social participation. The second element is based upon the tacit assumption that social change takes place through social planning and management rather than by other processes. The third aspect presumes that the only limits to changing society through educational planning and reform are an

inadequate resource base, an insufficient knowledge base, or a lack of appropriately-trained planners. Let us address each of these in turn.

The first element proceeds from the rather peculiar premise that poverty, prejudice, repression, and domination are considered to be universally repugnant to all societies and all of their members. It is assumed unquestionably that societies wish to rid themselves of these cancers, but the only way that they can be excised is by utilizing the educational system. Such a view implies that (a) the wealthy wish to redistribute their wealth and income to the poor; (b) dominant political groups wish to share their power with the disenfranchised; and (c) exploitation and repression of the weak by the powerful is a product of ignorance. Somehow, it is assumed that there is consensus on these issues, but the solutions cannot be effected without educating the poor, disenfranchised, and oppressed so that in the future they can be "more equal."

More specifically this element of the planning ideology assumes and promotes two tacit beliefs. First, the political problems of societies have been resolved in favor of a benign consensus, but it is necessary for the educational system to make that political consensus a reality. And, second, the "better" society is necessarily one that must wait until the future, when the people are appropriately educated. I would argue that the continuing functioning of the societies to produce unspeakable poverty and squalor on the one hand and unimaginable wealth on the other; to sanction a ruling class and a disenfranchised one; and to sponsor political, economic, and physical repression is evidence enough that the political problems have not been resolved by consensus, and they will not yield to a "technical" solution at some future time through the use of the educational system.

The second element of the planning ideology is the view that social change is essentially a planned or managed phenomenon. Despite the plethora of alternative theories on how social change comes about (Appelbaum 1970; Paulston 1976), the educational planner has selected the one viewpoint that places him at the forefront in manipulating the levers of change. Thus, the literature of educational planning is couched in terminology that suggests that educational planners, reformers, and policy specialists have a substantial control over social outcomes. Yet, the evidence that basic changes in the educational process can be planned that will alter social outcomes will not emerge. That is, it is the external appearance of planning and its rationality that have become the symbol of change itself. If planners and reformers use such terminology as change agents, managed change and planned change, they and their followers tend to believe that the use of the language and the logic of rational change imply a control of the change process itself. In contrast, a review of the educational reform and implementation literature suggests that the rhetoric of reform is probably its most important manifestation rather than the changes that it claims to produce (Charters 1973; Gross, Giacquinta, and Bernstein 1971; Sarason 1971).

For example, it is sobering to consider the experience at implementing even nominal planned reforms that attempted to intervene in the educational process in the United States. For several decades there have existed projects to retrain teachers in subject matter, teaching methods, knowledge of particular cultural groups, new modes of curriculum organization, and so on. At a more specific level there have been attempts to alter traditional staffing patterns, and to implement team-teaching approaches, open classrooms, flexible modular scheduling, educational radio and television, racial desegregation, and changes in school governance. There is no evidence

to support the view that these attempts have made any difference in any measurable outcome or process of schooling, and in many cases it is not even clear that anything other than their external appearances were even initiated (P. Berman and M. McLaughlin 1975).

The third element of the ideology assumes that the only limits to changing society through educational planning are insufficient resources, an inadequate knowledge base, or lack of appropriately-trained planners. In the first case it is argued that the resources that are made available for educational planning and initiation of the plans are not sufficient to support the educational changes that are necessary for the solution of social problems. In this event, the remedy is to obtain a larger share of the government budget. In the second case it is maintained that some of the technical knowledge that is necessary to improve educational and social outcomes is not yet available. The prescription for this situation is a greater investment in research to uncover the crucial technical relations on such matters as the determinants of scholastic achievement or more cost-effective methods of providing educational services or providing the proper type of education to improve productivity and citizenship. In the case of a lack of appropriately-trained planners, the obvious diagnosis is to train more of them and to improve the proficiencies of existing educational planners. Thus, the ideology assumes that any limits of educational planning can be overcome by obtaining increased resources, pursuing additional research, and training new planners while upgrading the proficiencies of existing ones.

In contrast, we have argued that educational planning will succeed only when it is consistent with the dialectical phase in which it is initiated. In periods of correspondence and relatively unfettered social

reproduction and utilization of labor power, there are three types of tasks that can be undertaken successfully by educational planners.

First, there is the case where the goal of the planner is essentially logistical. This is true when educational planning is limited to such exercises as the design and location of new school buildings or the expansion of teacher training or the provision of student transportation services. Given an adequate budget, knowledge base, and trained planners, it is possible to construct and initiate a plan for constructing new school plants or increasing teacher training or arranging appropriate transportation services. Educational planners can be as successful at logistical exercises as can other planners.

Second, there is the case where the planner will set out the requirements for educational changes that do not threaten or appear to threaten the present operations of other institutions or dominant groups in the society. A good example of this is curriculum reform that does not challenge the existing social order. For example, it should be possible to develop and implement a new approach to science education for the primary grades. In this case the planners would assist other educators in the construction of curriculum, the training and retraining of teachers, the creation and distribution of instructional materials, and the other tasks which are necessary for a successful development and implementation. Even so, there may be formidable obstacles to adoption of the innovations as historical analyses have shown (Berman and McLaughlin 1975).

Third, there is the case where educational planning conforms to the changes that are consistent with the momentum of the dialectic. For example, the success of planning and implementing educational expansion in developing societies is a case in point. Most of these societies are

predicated upon a development model in which an attempt is made to attract foreign investment. But, the business of investors is to make profits, not to assist societies in developing or becoming more nearly egalitarian and democratic. The attractiveness of investment in developing nations is attributable directly to the prospects of securing enormous profits with little risk. These conditions are satisfied when there is a large reserve army of trained labor that is not permitted to organize in its own behalf. Such a labor force can be exploited at low wages for long hours without concern about their safety and health. The role of educational expansion in such a setting is to reproduce labor power for multinational capitalist firms while keeping the labor market slack so that labor costs remain low and workers can be exploited, given their lack of alternatives.

It is little wonder that the educational systems of many developing countries have expanded, far beyond that which would be justified by available jobs. Industry, government, and the local elites who were the principle domestic beneficiaries of foreign investment promoted the educational expansion, and parents created a strong social demand for more schooling for their own children in order not to fall behind in the quest for social mobility and status. Of course, in the aggregate the expansion of the schools meant that an individual would need more and more schooling to maintain even a low position in the society. But, this entire constellation of forces served to foster an educational strategy for expanding the amount of exploitable trained labor. Such strategies have often been buttressed by loans from the countries that were benefiting from the profits of foreign investment, with particular emphasis on the use of educational media exported from the advanced societies. And, generally the educational reforms that were designed to make this expansion more rapid and efficient

have tended to be successful. That this process of over-expansion will undermine the existing political and economic institutions over the longer run is a real possibility in these situations. But, it is hardly a purposive element of the planning strategy.

But in periods of overt conflict and change, the educational planner will be laden with a new agenda. The divergence between the functions of the educational system and the requirements of the workplace will stimulate an extensive period of educational and workplace reforms to create a new synthesis of correspondence between the two institutions. This very active phase of reform will create new tasks for the educational planner in the design and implementation of the reforms. What is significant, of course, is that the role of the planner will be essentially logistical rather than instrumental. Paradoxically, reforms which might not have been attainable in an earlier period will now become dominant, while some traditional educational practices will subside. Yet, the educational planner will be a technician in assisting the process, not an architect. The planner will attend to the details of implementation, not the strategy of change.

While the more heroic aspects of educational planning are surely deflated by this assessment, it would seem to be a more useful and productive context for thinking about both the potential and limits of educational planning than the more prevalent view of planning and managing social change. The latter concept of planning has neither an historical basis, nor does it have predictive value. Only when the educational planning exercise is placed in its proper perspective will we be able to assess properly its function and performance. With or without educational planners, it is likely that we will see greater workplace democracy over the next generation and corresponding changes in the educational system. Good educational planning may go far to make that transition a smoother one.

FOOTNOTES

1. This monograph is based heavily upon the contributions of the author to a much more ambitious project carried out by the Center for Economic Studies on "Educational Implications of Industrial Democracy." Much of the support for that project was derived from the National Institute of Education of the U.S. Department of Health, Education, and Welfare as well as the support of the author as a Fellow in 1976-77 at the Center for Advanced Studies in the Behavioral Sciences by the National Science Foundations and the Spencer Foundation. The complete study will be published in the future by Henry M. Levin and Martin Carnoy and others under the tentative title, The Dialectic of Education and Work.

2. The most important educational theorist who advocated this view was David Snedden. See his biography in Drost 1967. Also, a comparison of the views of Dewey and Snedden is found in Arthur Wirth 1977.

3. It is important to point out that this section will focus on a general analysis of the historical relation between education and work. The purpose is to examine this history in a dialectical context. No attempt is made to carry out separate analyses for men and women or for different races or industries. However, some insights are offered on these aspects, and present research is attempting to apply the more general analysis to these specific groups.

4. This interpretation is consistent with the specific transformations of the school during this period as well as the more general effects that "scientific management" had in molding personal values and political ones. On the former see Tyack 1974; Callahan 1962; and Meyer, Tyack, Nagel, and Gordon 1977. On the latter, see Haber 1964 and Noble 1977.

5. The importance of the Massachusetts example is that it was an early leader among the states in American education. In this sense, it represented a harbinger of what was to come. It is important to note that Horace Mann had little political or bureaucratic power. Rather, it was his philosophic and persuasive power that make him important in this movement.

6. The development of this section owes much to the earlier work of Michael Carter 1976. While my formulation of the dialectical relationship is somewhat different than Carter's, my thinking on this subject has been heavily influenced by his analysis.

7. The most basic of these contradictions is that reflected in the capitalist relation itself. Capitalist owners and workers have different class interests. The former wish to maximize their profits and the accumulation of capital, while the latter wish to obtain as large a wage as possible while minimizing their contribution to a labor process that is alien to their personal needs. But, maximum profits and capital accumulation depend upon the extraction of a maximum of work from the employee while paying the worker only the minimum requirement for the reproduction of his or her labor power. As we noted, capitalism mediates this contradiction through the hierarchal and minute division of labor as well as an educational system that contributes

to the reproduction of the social division of labor under capitalism. See K. Marx 1967: Parts III-VI and 1964.

8. For the United States see R. Freeman 1976 and for Western Europe see H. Levin 1976.

9. U.S. estimates of economic growth can be found in Fromm 1976. For Western Europe more generally, see OECD 1977.

10. The displacement of high school graduates by college graduates in the job que is discussed in Berg 1970 and Thurow 1975.

11. Berg 1976 has argued that the poor quality of such data are indicators of the low priorities attached to workers by managers as well as the fact that such information might be interpreted as a reflection of poor management. In the latter case there is a disincentive to collecting and reporting accurate time series on the symptoms of worker dissatisfaction. Also see Herrick 1975 for a discussion of the necessary data and their formulation.

12. This is reflected in such major investigations as Henle 1974 and Flanagan, Strauss, and Ulman 1974.

13. See for example, the following: T.F. Lyons 1972; Katzell and Yankelovich 1975; Hedges 1973 and 1975; Bureau of National Affairs 1970; and Flanagan et al. 1974.

14. B.L. White 1960; Newman 1974; and Schneider and Snyder 1975 represent just a few examples of this voluminous literature.

15. An analysis of this phenomenon within the overall framework of contemporary U.S. monopoly capitalism is Wyckoff 1975. Herrick 1975 discusses ten aspects of counter-productive labor activity and suggests methods for estimating their magnitude.

16. The relationship between the social and technical context of the workplace is emphasized especially in the work of the Tavistock group. See for example, Emery and Trist 1960 and 1969. A comprehensive analysis of both theory and practice with respect to the socio-technical approach is Susman 1976.

17 See Joint Economic Committee (June 17, 1976) for an overall analysis of ESOPs.

18. See H. Schauer for a critique. A major structural conflict is the fact that the legal obligation of corporate boards is to serve the interests of shareholders. To the degree that these obligations conflict with the concerns of workers, worker representatives are obligated to go against their own interest. See Bastin 1976.

19. For more details see Jenkins 1974a: Chap. 7; I. Adizes 1971; Vanek 1971; Horvat 1976; Blumberg 1968: Chaps. 8 and 9; H. Wachtel 1973.

20. For example, see R. Walton 1975 for a specific discussion and L. Davis and A. Cherns 1975 for a diverse set of perspectives on this topic. These criteria also comport well with the conceptual framework set out by Herzberg 1966.

21. In the public sector this criterion might be the amount of resources controlled by the agency. If an increase in productivity results in a decrease in budget and personnel — because of greater efficiency — there will be little managerial incentive to increase productivity. See W. Niskanen 1971.

22. For more detail see S. Marglin 1974 and H. Braverman 1974.

23. See E. Kay 1976 for a general view of the problems of middle managers and the causes of their discontent.

24. This is an especially important possiblity, given the empirical results that have tied higher productivity to increased worker participation. See, for example, P. Blumberg 1968: Chaps 5 and 6.

25. While we have referred to the rise of education in this context, the role of the state is reflected in E.P. Thompson 1964. Also, see Chapter 10 of Levin and Carnoy, forthcoming.

26. See for example, A. Glyn and B. Sutcliffe 1972, especially Chapter 8.

27. Quoted in D. Wedderburn 1977:166. Original taken from E. Blatstone and P. Davies 1976. Also see R. Hyman 1973 and F. Furstenberg 1977.

28. For commentaries on the earlier period see T.L. Johnson 1962. The latest legislation is summarized in Ministry of Labour, Sweden 1975. The latter concerns itself primarily with the omission of paragraph 32 of the 1906 agreement between the LO and SAF which gave the employer the sole right to hire and fire.

29. For a description, see Rehn and Lundberg 1963 and Meidner and Andersson 1973.

30. Even during the high unemployment period of the thirties, working class consciousness did not seem to emerge as reflected in surveys of attitudes. S. Yerba and K Schlozman 1977.

31. In this respect the Work in America report might be given symbolic importance beyond its ostensible recommendations. See U.S. Department of Health, Education, and Welfare 1973.

32. For a general analysis of internal labor markets see Doeringer and Piore 1971.

33. See the analysis of the interrelations between hierarchy and participation in A. Tannenbaum et al. 1974.

34. See for example, the studies cited in U.S. Department of Health, Education, and Welfare, Work in America, 1973: Chap. 4 and Appendix; Blumberg 1968;

Jenkins 1974a; B. Smith 1976; and Katzell et al., 1977.

35. See G. Susman 1975; E. Thorsrud 1975; Emery and Thorsrud 1969; Thorsrud, Sorenson, and Gustavsen 1976; Bernstein 1976a; Davis and Trist 1976.

36. Thoughtful analyses of particular forms of worker participation are found in Bernstein 1976a; Greenberg 1975 and Blumberg 1968.

37. This account is taken primarily from R. Walton 1976 and L. Ketchum 1975.

38. See The Economist (May 29, 1976: 87) and Business Week (May 19, 1975: 52).

39. The information used here on the Scanlon Plan is derived from National Commission on Productivity and Work Quality 1975; H.M.F. Rush 1973: 42-50; and D. Jenkins 1974a: 222-224.

40. Of course, the fact that an ESOP is usually a management-initiated device to raise capital at a relatively low cost means that the existence of an ESOP does not mean that worker participation and control will necessarily follow. See Joint Economic Committee 1976.

41. See, for example, S. Marland 1974 and K. Hoyt et al., 1972.

42. See an elaboration of these criticisms in Behn et al., 1974. Studs Terkel 1974 provides interesting insights on the dignity issue. Also see Grubb and Lazerson 1975.

43. In a national U.S. survey in 1977, 83 percent of respondents approved this trend. Gallup 1977:36.

44. This issue was not considered by the special study of the College Entrance Examination Board, but it is consistent with the evidence provided in the report. See Willard Wirtz et al., 1977.

45. Micro-political educational reforms refer to changes in the internal governance of education that alter the traditional decision-making process. For more detail see H. Levin 1976a and Levin and Carnoy, forthcoming, Chap. 11.

46. Also see K. Wilcox 1977 for an extensive empirical study that supports this conclusion.

BIBLIOGRAPHY

Adizes, I. Industrial Democracy: Yugoslav Style. New York: Free Press, 1971.

Applebaum, Richard P. Theories of Social Change. Chicago: Markham Publishing Co., 1970.

Argyris, Chris. Integrating the Individual and the Organization. New York: John Wiley and Sons, Inc., 1964.

_____. Personality and Organization. New York: Harper and Brothers, 1957.

Aronowitz. False Promises. New York: McGraw-Hill Book Company, 1973.

Avineri, Schlomo. The Social and Political Thought of Karl Marx. New York: Cambridge University Press, 1971.

Bastin, N.A. "Company Law: Some Problems of Worker Directors," New Law Journal, March 11, 1976, pp. 271-273.

Behn, William, Martin Carnoy, Michael Carter, Joyce Crain, and Henry Levin. "School is Bad: Work is Worse," School Review, Vol. 82, No. 1, November 1974, pp. 49-68.

Bell, Daniel. Coming of Post-Industrial Society: A Venture in Social Forecasting. New York: Basic Books, Inc., 1973.

Benson, J.K. "Organizations: A Dialectical View," Administrative Science Quarterly, Vol. 22, March 1977, pp. 1-21.

Berg, Ivar. Education and Jobs: The Great Training Robbery. New York: Praeger, 1970.

_____. "Epilogue: Working Conditions and Management's Interests," in B.J. Widick (ed.), Auto Work and Its Discontents. Baltimore: The John Hopkins University Press, 1976, pp. 96-107.

Berman, P. and M. McLaughlin. Federal Programs Supporting Educational Change: The Findings in Review, Vol. IV. Santa Monica, Cal.: The Rand Corporation, 1975.

Bernstein, Paul. "Necessary Elements for Effective Worker Participation in Decision Making," Journal of Economic Issues, Vol. X, No. 2, June 1976, pp. 490-522.

_____. "Run Your Own Business: Worker-Owned Plywood Firms," Working Papers, Vol. 2, No. 2, Summer 1974, pp.24-34.

_____. Workplace Democratization: Its Internal Dynamics. Kent, Ohio: Kent State University Press, 1976a.

Bettelheim, Charles. Cultural Revolution and Industrial Organization in China: Changes in Management and the Division of Labor. New York: Monthly Review Press, 1975.

Blatstone, Eric and P.L. Davies. Industrial Democracy: European Experience, Two reports prepared for the Industrial Democracy Committee. London: Her Majesty's Stationery Office, 1976.

Block, James H. (ed.). Mastery Learning. New York: Holt, Rinehart, and Winston, 1971.

Bloom, Benjamin S. Human Characteristics and School Learning. New York: McGraw-Hill Book Company, 1976.

Blumberg, Paul. Industrial Democracy: The Sociology of Participation. New York: Schocken Books, 1968.

Bowles, Samuel and Herb Gintis. Schooling in Capitalist America. New York: Basic Books, Inc., 1976.

Braverman, Harry. Labor and Monopoly Capital. New York: Monthly Review Press, 1974.

Brayfield, Arthur H. and Walter H. Crockett. "Employee Attitudes and Employee Perfomance," Psychological Bulletin, Vol. 52, 1955, pp. 396-424.

Bright, James R. "The Relationship of Increasing Automation and Skill Requirements," in National Commission on Technology, Automation and Economic Progress, The Employment Impact of Technological Change, Appendix, Vol. II, Technology and the American Economy. Washington, D.C., 1966, pp. 201-221.

The Bureau of National Affairs, Inc. Turnover and Job Satisfaction, Personnel Policies Forum, Survey No. 91. Washington: The Bureau of National Affairs, 1970.

Business Week. May 19, 1975, p. 52.

Caja Laboral Popular, Division Empresarial. "Análisis De Productividad: Indicès Generales," Año 1973. Mondragon, Spain: 1974.

Caja Laboral Popular. Memoria 1974. Mondragon, Spain: 1975.

Callahan, Raymond. Education and the Cult of Efficiency. Chicago: The University of Chicago Press, 1962.

Carnegie Commission on Higher Education. College Graduates and Jobs: Adjusting to a New Labor Market Situation. Berkeley: Carnegie Commission on Higher Education, 1973.

Carnoy, Martin and Henry M. Levin. The Limits of Educational Reform. New York: David McKay and Co., Inc., 1976.

_____ and Henry M. Levin. "Workers' Triumph: The Meriden Experiment," Working Papers, Winter 1976a, pp.47-56.

Carter, Michael. "Contradiction and Correspondence: Analysis of the Relation of Schooling to Work," in M. Carnoy and H. Levin, The Limits of Educational Reform. New York: David McKay and Co., Inc., 1976, Chap. 3.

Cartter, Allan M. Ph.D's and the Academic Labor Market. New York: McGraw - Hill Book Co., 1976.

Charters, W.W., Jr. Measuring the Implementation of Differentiated Staffing. Eugene, Oregon: Center for the Advanced Study of Educational Administration, 1973.

Coleman, James S. et al. Youth: Transition to Adulthood. Chicago: University of Chicago Press, 1974.

Coons, John E., William H. Clune III, and Stephen D. Sugarman. Private Wealth and Public Education. Cambridge, Mass.: Harvard University Press, 1970.

Cremin, Lawrence A. The Transformation of the School: Progressivism in American Education 1876-1957. New York: Vintage Books, 1964.

Davis, Louis E. and Albert B. Cherns (eds.). The Quality of Working Life, Two Volumes. New York: The Free Press, 1975.

_____ and Eric L. Trist. "Improving the Quality of Work Life: Sociotechnical Case Studies," in Work and the Quality of Life, James O'Toole (ed.). Cambridge, Mass,: MIT Press, 1976, Chap. 11.

Department of Trade. Report of the Committee of Inquiry on Industrial Democracy, Chairman Lord Bullock (The Bullock Report). London: Her Majesty's Stationery Office, January 1977.

Dewey, John. The Child and the Curriculum and the School and Society. Phoenix Books P_3, Chicago: The University of Chicago Press, 1956.

_____. Democracy and Education. New York: MacMillan Co., 1916

Diamond, Daniel and Hrach Bedrosian. Hiring Standards and Job Performance, U.S. Department of Labor, Manpower Research Monograph No. 18. Washington: U.S. Government Printing Office, 1970.

Doeringer, P.B. and M.J. Piore. Internal Labor Markets and Manpower Analysis. Lexington, Mass.: Lexington Books, 1971.

Dreeben, Robert. On What is Learned in School. Reading, Mass.: Addison Wesley and Co., 1968.

Drost, Walter H. David Snedden and Education for Social Efficiency. Madison, Wis.: University of Wisconsin Press, 1967.

Duncan, Greg J. "Earnings Functions and Nonpecuniary Benefits," The Journal of Human Resources, Vol. XI, No. 4, Fall 1976, pp. 462-483.

Duncan, O.D., D.L. Featherman, and B. Duncan. Socioeconomic Background and Achievement. New York: Seminar Press, 1972.

The Economist. May 29, 1976, p. 87.

Emery, F.E.and E. Thorsrud. Form and Content of Industrial Democracy. London: Tavistock Institute, 1969.

_____ and E.L. Trist. "The Causal Context of Organizational Environments," in F.E. Emery (ed.), Systems Thinking. London: Penguin Books, 1969.

_____ and E.L. Trist. "Socio-technical Systems," in C.W. Churchman and M. Verhulst (eds.), Management Sciences Models and Techniques, Vol. 2. London: Pergamon, 1960.

Employment and Training Report of the President, transmitted to the Congress 1976. Washington: U.S. Government Printing Office, 1976.

Fine, Keitha Sapsin. "Worker Participation in Israel," in Workers' Control, Gerry Hunnius (ed.). New York : Vintage Books, 1973, pp. 226-264.

Flanagan, Robert J., George Strauss, and Lloyd Ulman. "Worker Discontent and Workplace Behavior," Reprint No. 388, Institute of Industrial Relations, University of California, Berkeley, 1974.

Freeman, Richard B. The Over-Educated American. New York: Academic Press, 1976.

Fromm, Gary. "Forecasts of Long-Run Economic Growth," in U.S. Economic Growth from 1976 to 1986: Prospects, Problems, and Patterns, Vol. 6 Forecasts of Long-Run Economic Growth, 94th Congress, 2nd Session, Joint Economic Committee. Washington: U.S. Government Printing Office, 1977, pp. 1-37.

Furstenberg. Friedrich. "West German Experience with Industrial Democracy," The Anna Vol. 431, May 1977, pp. 44-53.

Gallup, George H. "Ninth Annual Gallup Poll of the Public's Attitudes Toward the Public Schools," Phi Delta Kappan, Sept. 1977, pp. 33-48.

Gintis, Herbert. "Education, Technology and the Characteristics of Worker Productivity," American Economic Review, Vol. LXI, No. 2, May 1971, pp. 266-279.

_____. "The Nature of Labor Exchange and the Theory of Capitalist Production," in Review of Radical Political Economics, Vol. 8, No. 2, Summer 1976, pp. 36-54.

Glyn, Andrew and Bob Sutcliffe. Capitalism in Crisis. New York: Pantheon Books, 1972.

Gordon, M.S. "The Changing Labor Market for College Graduates," in Higher Education and the Labor Market, M. Gordon (ed.). New York: McGraw-Hill, 1974, Chap. 2.

Gorz, Andre. Strategy for Labor. Boston: Beacon Press, 1968.

Grasso, John. "On the Declining Labor Market Value of Schooling," Paper prepared for the 1977 Annual Meeting of the American Educational Research Association, New York City, April 4-8, 1977 (mimeo).

Greenberg. Edward S. "The Consequences of Worker Participation: A Clarification of the Theoretical Literature," Social Science Quarterly, September 1975, pp. 191-209.

Gross, Neal. "Theoretical and Policy Implications of Case Study Findings about Federal Efforts to Improve Public Schools," The Annals, AAPSS, No. 434, November 1977.

_____, Joseph B. Giacquinta, and Marilyn Bernstein. Implementing Organizational Innovations. New York: Basic Books, Inc., 1971.

Grubb, W. Norton and Marvin Lazerson. "Rally 'Round the Workplace: Continuities and Fallacies in Career Education," Harvard Educational Review, Vol. 45, No. 4, November 1975, pp. 451-474.

Gyllenhammar, Pehr G. People at Work. Boston: Addison-Wesley, 1974.

Haber, Samuel. Efficiency and Uplift: Scientific Management in the Progressive Era 1890-1920. Chicago: University of Chicago Books, 1964.

Hedges, Janice. "Absence from Work -- A Look at Some National Data," Monthly Labor Review, July 1973, pp. 24-30.

_____. "Unscheduled Absence from Work — An Update," Monthly Labor Review, August 1975, pp. 36-39.

Henle, Peter. "The Economic Effects: Reviewing the Evidence," in The Worker and the Job, Jerome M. Rosow (ed.). Englewood Cliffs, N.J.: Prentice Hall, 1974, pp. 118-144.

Herbst, P.G. Autonomous Group Functioning. London: Tavistock Institute, 1962.

Herrick, Neal Q. The Quality of Work and Its Outcomes: Estimating Potential Increases in Labor Productivity. Columbus, Ohio: The Academy for Contemporary Problems, 1975.

Herrnstein, Richard. IQ in the Meritocracy. Boston: Little, Brown, and Co., 1973.

Herzberg. Work and the Nature of Man. Cleveland: World Publishing Co., 1966.

Horvat, Branko. The Yugoslav Economic System. White Plains, N.Y.: M.E. Sharpe, Inc., 1976.

Hoyt, Kenneth et al. Career Education: What it is and How to do it. Salt Lake City: Olympus, 1972.

Hyman, Richard. "Industrial Conflict and the Political Economy: Trends of the 60s and Prospects for the 70s," The Socialist Register, 1973. London: Merlin Press, 1973, pp. 101-153.

Inkeles, Alex. "Socialization of Competence," Harvard Educational Review, Vol. 36, No. 3, Summer 1966, pp. 265-283.

Jackson, Philip W. Life in Classrooms. New York: Holt, Rinehart, and Winston, 1968.

Jenkins, David. Industrial Democracy in Europe. Geneva: Business International S.A., 1974.

_____. Job Power. Baltimore: Penguin Books Inc., 1974a.

Johnson, David, W. and Roger T. Johnson. "Instructional Goal Structure: Cooperative, Competitive, or Individualistic," Review of Educational Research, Vol. 44, No. 2, Spring 1973, pp. 213-240.

Johnson, T.L. Collective Bargaining in Sweden. London: Allen and Unevin, 1962

Joint Economic Committee, Congress of the United States. Broadening the Ownership of New Capital: ESOPs and Other Alternatives, 94th Congress, 2d Session, Joint Committee Print, June 17, 1976. Washington: U.S. Government Printing Office, 1976.

_____. The Economics and Financing of Higher Education in the United States, 91st Congress, 2d Session. Washington: U.S. Government Printing Office, 1969

Jones, Derek. "The Economics and Industrial Relations of Producer Cooperatives in the United States, 1791-1939," Economic Analysis and Workers' Management, Nos. 3-4, 1977.

Kalleberg, Arne and Aage Sorensen. "The Measurement of the Effects of Overtraining on Job Attitudes," Sociological Methods and Research, Vol. 2, No. 2, November 1973, pp. 215-238.

Karabel, Jerome. "Community Colleges and Social Stratification," Harvard Educational Review, Vol. 42, No. 4, November 1972, pp. 521-562.

Katz, Michael B. Class Bureaucracy and Schools: The Illusion of Educational Change in America. New York: Praeger Publishers, 1971.

Katzell, Raymond A., Penney Bienstock, and Paul H. Faerstein. A Guide to Worker Productivity Experiments in the United States 1971-75, prepared for Work in America Institute, Inc. New York: New York University Press, 1977.

_____ and Daniel Yankelovich. Work, Productivity, and Job Satisfaction. New York: The Psychological Corporation, 1975.

Kay, Emanuel. "Middle Management" in Work and The Quality of Life, James O'Toole (ed.). W.E. Upjohn Institute for Employment Research, 1976.

Ketchum, Lyle D. "A Case Study of Diffusion," in The Quality of Working Life, L.E. Davis and A.B. Cherns (eds.), Vol. 2. New York: The Free Press, 1975, Chap. 11.

Knowles, Asa S. and Associates. Handbook of Cooperative Education. San Francisco: Jossey-Bass Inc. 1972.

Kohn, Melvin L. Class and Conformity: A Study in Values. Homewood, Ill.: The Dorsey Press, 1969.

Kremen, Bennett. "No Pride in this Dust," Dissent, Winter 1972, pp. 21-28.

Kurland, N. (ed.). Entitlement Studies, NIE Papers in Education and Work, No. 4. Washington: National Institute of Education, 1977.

Landes, William W. and Lewis C. Solmon. "Compulsory Schooling Legislation: An Economic Analysis of Law and Social Change in the Nineteenth Century," The Journal of Economic History, Vol. XXXII, No. 1, March 1972, pp. 54-91.

Lazerson, M. and W.N. Grubb (eds.). American Education and Vocationalism: A Documentary History 1870-1970. New York: Teachers College, Columbia University, 1974.

Levin, Henry, M. "A Decade of Policy Development in Improving Education and Training of Low Income Populations," in A Decade of Federal Antipoverty Programs: Achievements, Failures, and Lessons, R. Haveman (ed.). New York: Academic Press, 1977, Chap. 4.

_____. "Educational Opportunity and Social Inequality in Western Europe," Social Problems, December 1976, pp. 148-172.

_____. "A Taxonomy of Educational Reforms for Changes in the Nature of Work," in M. Carnoy and H. Levin, The Limits of Educational Reform. New York: David McKay and Co., 1976a.

_____ and Martin Carnoy and others. The Dialectic of Education and Work. Palo Alto, Cal.: The Center for Economic Studies (forthcoming).

Levine, Herbert. "Strategies for the Application of Foreign Legislation on Paid Educational Leave to the United States Scene," National Institute of Education paper C-74-0107, processed.

Lockridge, Kenneth A. Literacy in Colonial New England. New York: W.W. Norton and Co., 1974.

Lyons, Thomas F. "Turnover and Absenteeism: A Review of Relationships and Shared Correlates," Personnel Psychology, Vol. 25, No. 2, 1972, pp. 271-281.

MacEwan, Arthur. "Incentives, Equality, and Power in Revolutionary Cuba," Socialist Revolution, No. 23, April 1975, pp. 117-130.

Main, Jackson, T. The Social Structure of Revolutionary America. Princeton: Princeton University Press, 1965.

Malinowski, Bronislaw. The Dynamics of Cultural Change. New Haven: Yale University Press, 1945.

Marcuse, Herbert. One Dimensional Man: Studies in the Ideology of Advanced Industrial Society. Boston: Beacon Press, 1964.

Marglin, Steve. "What Do Bosses Do?" Review of Radical Political Economics, Summer 1974, pp. 60-112.

Marland, Sidney P. Career Education: A Proposal for Reform. New York: McGraw Hill, 1974.

Marx, Karl. Capital, Vol. I, Edited by F. Engels, New World Paperbacks. New York: International Publishers, 1967.

_____. The Economic and Philosophic Manuscripts of 1844, Edited with an Introduction by Dirk Struik, New World Paperbacks. New York: International Publishers, 1964.

Meidner, Rudolf and Rolf Andersson. "The Overall Impact of an Active Labor Market Policy in Sweden," in Lloyd Ulman (ed.), Manpower Programs in the Policy Mix. Baltimore: The Johns Hopkins University Press, 1973.

Melaragno, Ralph J. and Gerald Newmark. "The Tutorial Community Concept," in New Models for American Education, James W. Guthrie and Edward Wynne (eds.). Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1971, pp. 98-113.

Meyer, John W., David Tyack, Joane Nagel, and Audri Gordon. "Education as Nation-Building in America: Enrollments and Bureaucratization in the American States, 1870-1930." Stanford, Cal: Boys Town Center for the Study of Youth Development, Stanford, University, 1977. (processed)

Muskin, Selma (ed.). Recurrent Education. Washington: U.S. Government Printing Office, 1974.

National Commission on Productivity and Work Quality. A Plant-Wide Productivity Plan in Action: Three Years of Experience with the Scanlon Plan. Washington: May 1975.

National Manpower Institute. Work Education Councils: Profiles of 21 Collaborative Efforts. Washington, 1977.

Nelson, Daniel. Managers and Workers: Origins of the New Factory System in the United States 1880-1920. Madison, Wis. University of Wisconsin Press, 1975.

Newman, John E. "Predicting Absenteeism and Turnover: A Field Comparison of Fishbein's Model and Traditional Attitude Measures," Journal of Applied Psychology, Vol. 59, No. 5, 1974, pp. 610-615.

Niskanen, William. Bureaucracy and Representative Government. Chicago: Aldine Publishing Co., 1971.

Noble, David F. America By Design. New York: Alfred A. Knopf, 1977.

Oakeshott, R. "Mondragon: Spain's Oasis of Democracy," in Jaroslav Vanek (ed.) Self-Management. Baltimore, Md.: Penguin, 1975, pp. 290-96.

Ollman, Bertell. Alienation: Marx's Conception of Man in Capitalist Society. Cambridge: Cambridge University Press, 1971.

OECD. Economic Outlook. Paris: OECD, July 1977.

Parsons, Talcott. Social Structure and Personality. New York: Free Press of Glencoe, 1964.

Paulston, Rolland G. Conflicting Theories of Social and Educational Change: A Typological Review. Pittsburgh, Pa.: University Center for International Studies, University of Pittsburgh, 1976.

Quinn, Robert P. and Martha S. Baldi De Mandilovitch. "Education and Job Satisfaction: A Questionable Payoff." Ann Arbor, Mich.: Survey Research Center, University of Michigan, November 1975.

Rehn, Gosta and Erik Lundberg. "Employment and Welfare: Some Swedish Issues," Industrial Relations, Vol. 2 No. 2, Feburary 1963, pp. 1-14.

Reich, Michael. "The Evolution of the United States Labor Force," in R. Edwards, M. Reich, T. Weisskopf (eds.), The Capitalist System: A Radical Analysis of American Society. Englewood Cliffs, New Jersey: Prentice-Hall Inc., 1972.

Rush, Harold M.F. Job Design for Motivation: Experiments in Job Enlargement and Job Enrichment. New York: The Conference Board, 1971.

_____. Organizational Development: A Reconnaissance. New York: The Conference Board, 1973.

Sarason, Seymour. The Culture of the School and the Problem of Change. Boston: Allyn and Bacon, Inc., 1971.

Schauer, Helmut. "Critique of Co-Determination," in Workers' Control, Gerry Hunnius (ed.). New York: Vintage Books, 1973, pp. 210-224.

Schiller, Bernt. "Industrial Democracy in Scandanavia," The Annals, Vol. 431, May 1977, pp. 63-73.

Schneider, B. and R.A. Snyder. "Some Relationships Between Job Satisfaction and Organizational Climate," Journal of Applied Psychology, Vol. 60, No. 3, 1975, pp. 318-328.

Seashore, Stanley E. "Defining and Measuring the Quality of Working Life," in The Quality of Working Life, Louis E. Davis and Albert B. Cherns (eds.), Volume One. New York: The Free Press, 1975, Chap. 6.

Sewell, William and Robert Hauser. Education, Occupation and Earnings: Achievement in the Early Career. New York: Academic Press, 1975.

Rachel Sharp and Anthony Green. Education and Social Control. London: Routledge and Kegan Paul, 1975.

Shirom, A. "The Industrial Relations Systems of Industrial Cooperatives in the United States, 1880-1935," Labor History, Vol. 13, No. 4, Fall 1972, pp. 533-551.

Silberman, Charles. Crisis in the Classroom. New York: Random House, 1970.

Smith, Adam. The Wealth of Nations, Modern Library Edition. New York: Random House, Inc., 1937.

Smith, Brett A. "Worker Participation and Productivity: Another Look at the Evidence," Paper presented at the Annual Meeting of the American Economics Association, Atlantic City, N.J., Sept. 1976. (mimeo).

Spring, Joel. Schooling and the Rise of the Corporate State. Boston, Mass.: Beacon Press, 1972.

Susman, Gerald I. Autonomy at Work: A Sociotechnical Analysis of Participative Management. New York: Praeger Publishers, 1976.

_____. "Technological Prerequisites for Delegation of Decision Making to Work Groups," in L. Davis and A. Cherns (eds.), The Quality of Working Life, Volume One. New York: The Free Press, 1975, pp. 242-255.

Srivastva, S. et al. Job Satisfaction and Productivity. Cleveland: Case Western University, Department of Organizational Behavior, 1975.

Tannenbaum, Arnold S. et al. Hierarchy in Organizations. San Francisco: Jossey-Bass Publishers, 1974.

Terkel, Studs. Working. New York: Pantheon Books, 1974.

Thompson, E.P. The Making of the English Working Class. New York: Pantheon, 1964.

Thorsrud, Einar. "Collaborative Action Research to Enhance the Quality of Working Life," in L. Davis and A. Cherns (eds.), The Quality of Working Life, Volume One. New York: The Free Press, 1975, pp. 193-204.

_____,Bjorg Aase Sorensen and Bjorn Gustavsen. "Sociotechnical Approach to Industrial Democracy in Norway," in Robert Dubin (ed.), Handbook of Work, Organization, and Society. Chicago: Rand McNally, 1976, Chap. 10.

Thurow, Lester. Generating Inequality. New York: Basic Books, Inc. 1975.

Tsetung, Mao. "On Contradiction," in Selected Readings from the Works of Mao Tsetung. Peking: Foreign Languages Press, 1971, pp. 85-133.

Tyack, David B. The One Best System. Cambridge, Mass: Harvard University

U.S. Department of Health, Education, and Welfare. The Condition of Education, 1976 Edition, National Center for Educational Statistics, NCES 76-400 Washington: U.S. Government Printing Office, 1976.

U.S. Department of Health, Education, and Welfare. Work in America, Report of a Special Task Force to the Secretary of Health, Education, and Welfare. Cambridge, Mass: The MIT Press, 1973.

U.S. Department of Labor, Manpower Adminiatration. "Youth and the Meaning of Work," Manpower Research Monograph No. 32. Washington: U.S. Government Printing Office, 1974.

Vanek, Jaroslav. The Participatory Economy. Ithaca, New York: Cornell University Press.

Verba, Sidney and Kay Lehman Schlozman. "Unemployment, Class Consciousness and Radical Politics: What Didn't Happen in the Thirties," The Journal of Politics, Vol. 39, No. 2, May 1977, pp. 291-323.

von Moltke, Konrad and Norbert Schneevoigt. Educational Leaves for Employees: European Experience for American Consideration, Carnegie Council on Policy Studies in Higher Education. San Francisco. Jossey-Bass Publishers, 1977.

Wachtel, Howard. Workers' Management and Workers' Wages in Yugoslavia. Ithaca: Cornell University Press, 1973.

Walton, Richard E. "Alienation and Innovation in the Workplace," in J. O'Toole (ed.), Work and the Quality of Life. Cambridge, Mass.: MIT Press, 1976, Chap. 10.

_____. "Criteria for Quality of Working Life," in L. Davis and A. Cherns (eds.), The Quality of Working Life, Volume One. New York: The Free Press, 1975, Chap. 5.

Weber, Max. "On Bureaucracy," in Hans Gerth and C. Wright Mills, From Max Weber: Essays in Sociology. New York: 1958.

Wedderburn, Dorothy. "The Bullock by the Horns," New Society 27, January 1977, pp. 166-168.

Welch, F. "Education in Production," Journal of Political Economy, Vol. 78, No. 1, Jan/Feb. 1970, pp. 35-59.

White, B.L. "Job Attitudes, Absence from Work, and Labour Turnover," Peronnnel Practice Bulletin, Vol. 16, No. 4, December 1960, pp. 18-23.

Wilcox, Kathleen. Schooling and Socialization: A Structural Inquiry into Cultural Transmission in an Urban American Community. Unpublished doctoral dissertation, Department of Anthropology, Harvard University, 1977.

Wirth, Arthur. "Issues Affecting Education and Work in the Eighties: Efficiency versus Industrial Democracy, A Historical Perspective," in Teachers College Record, Vol. 79, No. 1, September 1977, pp. 55-68.

Wirtz, Willard et al. On Further Examination: Report of the Advisory Panel on the Scholastic Aptitude Test Score Decline. New York: College Entrance Examination Board, 1977.

Wyco, Bill. "The Work Shortage: Class Struggle and Capital Reproduction," Review of Radical Political Economics, Vol. 7, No. 2, Summer 1975, pp. 11-26.

Yankelovich, Daniel. The New Morality. New York: McGraw-Hill Book Co., 1974.